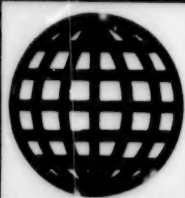


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23 May 1994



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JPRS Report

Environmental Issues

Environmental Issues

JPRS-TEN-94-014

CONTENTS

23 May 1994

CHINA

State Targeting 10 Provinces in Environmental Protection	1
NEPA to Set Up National Environmental Protection Fund	1
PRC Delegate at UN Conference on Small Island Countries	3
Official Introduces National Agenda 21	3
Rules on Import, Export of Chemicals	4

EAST ASIA

JAPAN

Tokyo Favors Compromise on Antarctic Whale Sanctuary	7
Panel Urges Greater Efforts To Protect Environment	7
IWC Delegation Head Vows To Block Antarctic Whale Sanctuary	7

SOUTH KOREA

Report on Air Pollution in Seoul	8
President Stresses Linking Environmental Protection, Trade	14
KORECO Campaigns To Preserve Farming Environment	15
Environment Ministry Responsible for Clean Tap Water	16
Role of Environmental Management Corporation Outlined	17

PAPUA NEW GUINEA

Swiss Firm Hired To Stop Rain Forest 'Devastation'	18
--	----

PHILIPPINES

Ramos Approves Nation's First Biodiversity Program	19
--	----

TAIWAN

Taipei To Attend CITES Meeting With Beijing's Permission	19
Taipei Joins CITES Working Panel	20
Corn, Soybean Importers Threaten To Stop Buying From U.S.	20

THAILAND

Council Initiates Environment Protection Projects	20
---	----

EAST EUROPE

BOSNIA-HERCEGOVINA

Tuzla Muslims Said Ready To Cause Ecologic Catastrophe	22
--	----

BULGARIA

'Alarming' State of Environment Reported	22
--	----

POLAND

Environmental Damage on Ex-Soviet Bases Assessed	22
--	----

ROMANIA

Iliescu, Nastase Address European Water Management Symposium	23
--	----

LATIN AMERICA

ARGENTINA

British Company Plans To 'Plunder' Quebracho Wood	24
---	----

BRAZIL

Article Views Threats to Ecological Reserves	24
--	----

CHILE

Foreign Minister Favors Whale Sanctuary in Antarctica	25
---	----

PERU

Establishment of National Environment Authority Announced	25
---	----

NEAR EAST/SOUTH ASIA

ALGERIA

World Environment Fund Donates \$9 Million for Projects	27
---	----

BANGLADESH

Commentary Urges Timely Solution to Water Sharing Issue	27
---	----

INDIA

Scientist Appeals Against Pesticide Pollution	28
---	----

IRAQ

Baghdad Mayor Says Embargo Endangers Environment	28
--	----

CENTRAL EURASIA

RUSSIA

'Secret Cities' Still Pose Ecological Threat	29
Kostromskaya Nuclear Plant Construction Threat to Volga Region	30
Addendum to Edict on State Environmental Strategy	31
Europarlament Ecologists Visit Defense Ministry	32
Official Says Russia Seen as World's Dump for Toxic Waste	32
'Environmentally Unfriendly' Buses Imported from Germany	32
Radioactive Pollution Research Project May be Available in Oct 94	33
Sunken Sub Komsomolets Not Endangering Fishing Industry	33
Further on Report Concerning Komsomolets Sub Pollution	33
Infighting Delays Komsomolets Expedition	33
Stolen Cesium Thought Dumped in Nikolayev Plant Reservoir	35
Commission Discusses Radioactive Waste Disposal Problem	35
Semipalatinsk Testing Ground Background Radiation Discussed	36
Impact of Semipalatinsk N-Tests on Altay Kray Discussed	37

ARMENIA

1993 Ecological Yearbook Issued	37
---------------------------------------	----

BELARUS

New Waste Processing Complex Is Built in Gomel Oblast	38
---	----

UKRAINE

Ukraine Minister on Integration of Economic, Ecological Reform	38
Article Warns of Imminent Man-Made Ecological Hazard	39
Officials on Demilitarization, Environment Damage in Crimea	40
Fire Safety at Chernobyl Remains Inadequate	41

WEST EUROPE

REGIONAL AFFAIRS

Siemens Process Decontaminates Swedish Reactor Vessel	43
Denmark To Host Meeting of East European Environment Aides	43

DENMARK

Energy Minister: Environment Top Priority in Energy Policy	43
--	----

FRANCE

French Biofuel Scientific Group Created	44
New, Modern Nuclear Fuel Reprocessing Plant To Be Opened	45

GERMANY

New Dioxin Hazard Said 'Threatening' Germany	45
BASF Inaugurates Plastics Recycling Factory	46
Hoechst Stops Production of CFC's	47
DASA, DARA Build Earth Satellite	47
Siemens, VEW To Cooperate in Energy Production	47
Lafontaine Discusses SPD 'Ecological Renewal'	48

NETHERLANDS

Drive Wheel in Car Saves One Third of Fuel	49
--	----

SWEDEN

Government Favors Ban on Leaded Gasoline	50
--	----

State Targeting 10 Provinces in Environmental Protection

40101007B Beijing CHINA DAILY [NATIONAL]
in English 8 Apr 94 p 3

[Text] The central government plans to crack down on rapidly increasing pollution and reinforce environment laws in a sweep of 10 provinces next month.

The probe is being organized by the Environmental Protection Committees of the National People's Congress (NPC) and the State Council.

All violators will be punished and their actions released to the media, said Wang Bingqian, vice-chairman of the NPC Standing committee.

Wang said some people still work against State laws and stipulations on environmental protection.

New industrial projects have been built without reporting to the local environmental departments and some have caused large amounts of pollution.

The poaching, killing and sale of endangered animals under national protection is still rampant in some places.

And inspectors will be looking to get rid of small cement plants, paper mills, petrochemical works and smelting furnaces that have been banned but are making a comeback.

The new effort will target 10 provinces and autonomous regions: Hebei, Jilin, Zhejiang, Fujian, Henan, Hunan, Sichuan, Guizhou, Inner Mongolia, and Guangxi.

The inspections will check on law enforcement, environmental controls and wildlife protection, in addition to the implementation of State regulations on forestry, water and soil preservation.

Song Jian, Director of the State council's Environment Protection Committee, called for changes in the law to include criminal penalties as severe as those faced by smugglers and drug traffickers.

Such penalties should include jail, he said.

Xie Zhenhua, director of the National Environmental Protection Agency (NEPA), reported the illegal poaching, killing and smuggling of protected wild animals had survived despite repeated government sweeps.

Some hotels and restaurants still make a fortune out of dishes based on rare animals.

Xie said some regions have brought in foreign projects that fall short of NEPA requirements, while others have imported harmful waste.

Technologically poor equipment and a lack of counter-pollution measures in many rural enterprises account for severe pollution and ecological disturbance in a wide range of areas, he said.

City residents most often complain about pollution from waste water, waste gas and trash and noise.

Some areas have eagerly launched high energy and pollution-prone projects at the expense of the environment as they greedily pursue short-term economic benefits, the official said.

Air quality in only a few of the 500 major cities has reached the State's first-grade standard, he added, and acid rain has spread from South China to some hinterland districts.

NEPA to Set Up National Environmental Protection Fund

40101007A Beijing CHINA DAILY [OPINION]
in English 30 Mar 94 p 4

[Article by Xi Mi: "NEPA Struggles to Find Funds for Environment"]

[Text] To make sure that the sky is blue and rivers are clean, China's investment-frustrated environmentalists are trying hard to change the grim picture painted by the State's protection plans.

The environmental situation in China is more serious than most people might have realized, says Zhang Kunmin, vice-director of the National Environmental Protection Agency (NEPA).

Pollution is particularly severe in some economically-developed and densely-populated regions; and city pollution has been worsening and spreading to the rural areas.

The pollution caused by rural enterprises is also more serious as indicated by a survey conducted by NEPA.

Environmental pollution and ecological damage have become a barrier for economic development, social stability and reform and opening to the outside world.

"Insufficient investment, outmoded production facilities, and lax law enforcement are responsible for the current environmental problems," said Yang Zuoqing, deputy director of NEPA's pollution treatment department.

China spends 20 billion yuan (\$2.30 billion) on environment protection every year, which is 0.7 percent of its annual gross national product.

Such a percentage is low. But in a time when the country is thirsty for development funds, it is not easy for the government to rapidly increase investment for protection.

How to protect environment effectively without much financial investment has been analyzed and reanalyzed.

There are many options including the introduction of clean production methods, better management of environmental investment and stricter law enforcement. NEPA is considering setting up a national environmental protection methods, better management of environmental investment and stricter law enforcement.

NEPA is considering setting up a national environmental protection fund, combining government environmental spending, overseas investment as well as enterprises' licence fees for emitting pollutants.

Based on this fund, a national protection investment corporation can be established to deal with transprovincial environmental problems and help the central government implement international treaties. This will make better use of investment.

An experiment in Shenyang, capital of Liaoning Province, has proven effective.

In 1988, with the support of the NEPA, the Shenyang Environmental Protection Investment Corporation was founded to oversee the design, bidding and management of environmental projects.

Part of the local government's old allocation was transformed into the environmental fund, which the Corporation then gave out as loans.

By the end of 1992, the corporation handled more than 162 million yuan (\$18.6 million) of environmental loans. The sum of environmental funds also tripled to 30 million yuan (\$3.5 million).

With more money, problems are easier to solve.

The corporation is supposed to be responsible for its own losses and gains, but it still retains some administrative power.

It receives guidance from the city's environmental protection bureau and its loans, to a certain extent, are still government allocations.

If the receivers of the loans use them efficiently, they do not return the principal; if not, they will have to repay part of the investment and interest.

But the fund managers have their headaches. Because the interest rate of the loans is much lower than that of the banks, some enterprises would rather delay in repayment. This has affected the flow and growth of the funds.

If a national investment corporation is to be founded, the government's environmental allocation to enterprises should be transformed into loans and the interest rate of the loans should be raised, NEPA sources suggested, adding that the enterprises' licence fees for emitting pollutants should not be used freely.

Besides a better management of the investment, the NEPA has also tried to introduce clean production methods.

In clean production, manufacturers select the best treatment programme after examining possible pollution sources in each production procedure.

According to Yang, with the aid of the World Bank, NEPA started clean production programmes in Beijing, Yantai, in Shandong Province, and Shaoxing, in Zhejiang Province in 1993.

The programme aims to establish model clean production bases, introduce clean production technology and give technical training classes.

Up to now, about 50 Chinese people have attended clean production classes given by foreign experts.

With little investment, 51 pollution reduction packages have been adopted in six enterprises in Beijing, altogether 203 tons of COD were reduced and some 6.3 million yuan (\$724,000) was saved.

Yang has high hopes for the investment bank and clean production programme, but he is less optimistic about the prospects of law enforcement improvement.

The awareness of environmental laws is low. More often than not laws are not strictly observed and enforcement is lax.

Some officials, especially the senior ones, let power and opinion overrule laws, Yang said.

Many times the environmental protection agencies find themselves lacking the authority to solve the problems facing them.

"There is no clarified legal articles stipulating the kind of punishment for the law violators," Yang said.

Some environmental protection departments in enterprises and local governments have been merged or cancelled. And some local environment protection chiefs have been replaced when they try to do their job.

Theoretically speaking, enterprises and projects seriously breaking anti-pollution laws should be shut down. But it will be a difficult decision to make because the State has to consider the benefits of the unemployed workers—most of whom would come from State factories [as published].

Yang urged that relevant laws and regulations be amended.

Now some enterprises would rather pay fines for emitting pollutants than treat pollution, which costs many times higher.

Statistics from GUANGMING DAILY indicated that the fines for environmental pollution in 1992 and 1993 totalled 5.05 billion yuan (\$580 million), but during the same period, the money invested to treat the pollution reached 5.57 billion yuan (\$640 million).

To keep up with the new realities of the market economy, the State plans to upgrade a series of environmental laws this year, including those concerning the air and water protection.

PRC Delegate at UN Conference on Small Island Countries

SK1305100094 Beijing XINHUA Domestic Service
in Chinese 0304 GMT 6 May 94

[Report by reporter Liu Ruichang (0491 3843 1603):
"China Supports Establishment of Partnership Relations
for Sustainable Development"]

[Text] Bridgetown, 5 May (XINHUA)—At a high-level meeting of the UN "global conference on sustainable development of small island developing countries" held in Bridgetown, capital of Barbados, Liu Chengguo, leader of the Chinese Government delegation, pointed out that the principle of establishing partnership relations for sustainable development as defined in this conference should become the foundation of international cooperation in the fields of environment and development.

Liu Chengguo held: The sustainable development of small island developing countries is an important component of global sustainable development. Small island developing countries' efforts to develop the economy and protect the environment constitute a contribution to realizing the goal of global sustained development.

Speaking on how to establish such partnership relations for sustainable development, Liu Chengguo said that such relations should be characterized by mutual respect and equality in treating each other. He said: Large or small and strong or weak as they may be, all countries are equal partners in international cooperation. Only in this way, can they have the foundation for cooperation. If a country criticizes others at every turn, always tries to force certain patterns or the policies and methods suitable to some countries on others, and even regards money and technical aids as political counters and puts forward unreasonable demands on the internal affairs of the aided countries, partnership relations will be out of the question.

Liu Chengguo said: In such partnership relations, the endeavor to solve global environmental problems should also be closely combined with the endeavor to solve the specific problems that small island developing countries are faced with, and small island developing countries should be helped to attain the two goals of sustained economic development and environmental protection, which supplement each other.

Liu Chengguo pointed out that such partnership relations should manifest the principle of "common and yet different responsibilities." He said: Changes in weather, rise of the sea level, pollution of seas and coasts, and other environmental problems are not created chiefly by small island countries, but small island countries are the first to suffer the damage. Many problems left from colonial or trusteeship periods are still restricting their social and economic development. Therefore, to effectively solve the environmental problems of small island

countries and enable them to achieve sustainable development, the international community, especially developed countries, should shoulder more duties.

In conclusion, Liu Chengguo said: As a developing country, China has a deep understanding and sympathy toward the difficulties small island developing countries encounter. China has established friendly cooperative relations with many small island developing countries and is willing to actively probe and strengthen multiform and multi-layered South-South cooperation to realize common development and prosperity.

The UN "global conference on sustainable development of small island developing countries" opened on 25 April. Government delegations from 100 member countries of the United Nations, including China, attended the conference. The conference was held particularly for the purpose of addressing the special problems regarding the environment and development of small island countries after the 1992 UN conference on environment and development.

Official Introduces National Agenda 21

OW1305113994 Beijing China Radio International
in English to Western North America 0400 GMT
20 Apr 94

[Report by China Radio International reporter Chen Yong; from the "Current Affairs" program—recorded]

[Text] China's economic reform has made tremendous progress but the country is facing a resources shortage, environmental pollution, and overpopulation. Vice Minister of the State Planning Commission Chen Yaobang says future development will pay more attention to sustainable development of the resources and the environment. He says China's National Agenda 21 aims at bringing industrial pollution under control by the year 2000. The National Agenda 21 covers the economic development, natural resources, environmental protection, agriculture, population, and education. The plan is China's response to the World Agenda 21 endorsed by the 1992 Earth Summit in Rio de Janeiro. All participating countries agreed to do their best to protect the environment. Premier Li Peng attended the Earth Summit and promised to implement the resolution on behalf of the Chinese Government. Vice minister Chen Yaobang says China's National Agenda 21 was approved by the State Council in March this year.

Chen Yaobang says China's National Agenda 21 considers the country's actual conditions and the relationship between the population, environment, and development in the next century. Chen Yaobang says the plan is the guiding principle for the nation's long and medium term social and economic plans. The formulation of the National Agenda 21 has involved over 300 Chinese experts and has drawn the attention of the United Nations Development Program [UNDP]. The UNDP has worked with the Chinese Government for making Agenda 21. Chen Yaobang says Agenda 21 will be

implemented in three phases. Sixty three projects are included in the first phase of the plan. The projects are aimed at obtaining international cooperation. Chen Yaobang says the preferential project will give a boost to China's sustainable development. He believes the implementation can have some influence over global development. However, he says the implementation is a huge amount of investment.

Chen Yaobang says the first stage of implementation needs \$3.7 billion. The Chinese Government will cover 60 percent of the cost. The other 40 percent will be obtained through international donations. China is to hold an international donor conference in July to gain financial and technical assistance.

Rules on Import, Export of Chemicals

HK1105113494 Beijing GUOJI SHANGBAO in Chinese
15 Apr 94 p 2

["Stipulations on Management of First Import of Chemicals and the Import and Export of Toxic Chemicals"]

[Text]

Chapter I—General Principles

Article 1: In order to protect the health of human beings and the ecology, to strengthen management over the first import of chemicals and over the import and export of toxic chemicals, and to implement the "London Code on Exchange of Data on the International Trade in Chemicals (1989 amended version)," (London Code for short) these stipulations are drafted.

Article 2: Activities in the import and export of chemicals within the areas administered by the PRC must abide by these stipulations.

Article 3: These stipulations apply to the first import of chemicals, and to environmental management regarding the import and export of chemicals listed into the "Category of Toxic Chemicals Banned or Strictly Restricted in China" (the Category for short).

Food additives, medicines, drugs for use in animals, cosmetics, and radioactive materials need not follow these stipulations.

Article 4: The terms used in these stipulations have the following meanings:

1. "Chemicals" refers to chemical materials made by man or obtained from the nature, including the chemical materials themselves, chemical mixtures, or components of chemical compounds, as well as the substances used as industrial chemicals and pesticides.

2. "Banned chemicals" refers to chemicals that are completely banned because they harm health and the environment.

3. "Strictly restricted chemicals" refers to chemicals that are banned because they harm health and environment, but still can be used under special circumstances and with authorization.

4. "Toxic chemicals" refers to chemicals that, after entering the environment, cause harm to health and the environment through environmental accumulation, biological accumulation, biological transformation, chemical reaction, and so on, or which cause serious harm and potential danger to human beings through contact.

5. "The first import of chemicals" means the export to China, by a foreign businessman or his agent, of a chemical that has not been registered in China by him. Even if the same kind of chemical has been registered in China by another foreign businessman or his agent, the former case will still be viewed as a first import of chemicals.

6. "Approval granted upon prior knowledge" means that international transportation of banned and strictly restricted chemicals—banned and strictly restricted for the purpose of protecting mankind's health and the environment—must be carried out with the approval of the state-level department assigned the administrative duty by the importing country.

7. "Export" and "import" refer to the activities of performing formalities for the entry and exit of chemicals through the PRC's customs departments, not including transit shipments.

Chapter II—Supervision and Management

Article 5: The State Environmental Protection Administration practices overall environmental supervision and management regarding the first import of chemicals and the import and export of toxic chemicals, takes charge of the thorough implementation of the procedure for granting approvals upon prior knowledge according to the "London Code," announces China's list of banned chemicals or strictly restricted toxic chemicals, registers the first import of chemicals, approves and manages the import and export of those toxic chemicals listed in the "Category," signs and issues "Environmental Management Registration Certificates for the Import/Export of Chemicals" and "Environmental Management Note of Advice on Allowing the Import/Export of Toxic Chemicals To Pass Through," and issues public notices on registering chemicals that are imported for the first time.

Article 6: The PRC's customs departments examine the import and export of toxic chemicals listed in the "Category," and allow them to pass on presentation of the "Environmental Management Note of Advice on Allowing the Import/Export of Toxic Chemicals To Pass Through" issued by the State Environmental Protection Administration.

The Ministry of Foreign Trade and Economic Cooperation, pursuant to its duties, assists the State Environmental Protection Administration in examining the relevant contents of applications for environmental management registration regarding the first import of chemicals and the import and export of toxic chemicals, and announces the "Category of Toxic Chemicals Banned or Strictly Restricted in China."

Article 7: The State Commission for Assessing Toxic Chemicals, to be established by the State Environmental Protection Administration, is responsible for the work to comprehensively appraise those chemicals for which applications for environmental management registration are lodged for the purpose of import and export, and will advise the State Environmental Protection Administration on technical matters relating to the implementation of these stipulations.

The State Commission for Assessing Toxic Chemicals will consist of the management personnel from the departments in charge of the environment, health, agriculture, the chemical industry, foreign trade, commercial inspection, customs, and the relevant quarters, as well as technical experts; they will serve a three-year tenure.

Article 8: Following these stipulations, the local environmental protection departments at various levels will carry out environmental management and supervision of the first import of chemicals and the import and export of toxic chemicals.

Chapter III—Registration Management

Article 9: When a foreign businessman or his agent exports to China any chemical that has not been registered in China (except for pesticides), he must file an application with the State Environmental Protection Administration for environmental management registration regarding the first import of chemicals, fill out the "Application for Environmental Management Registration Regarding the First Import of Chemicals" according to the regulations, and provide a test sample (generally not less than 250 grams) free of charge.

Registration and management of pesticides sold by foreign businessmen to China for the first time, will continue to be carried out according to the "Regulations on Registering Pesticides," and the Ministry of Agriculture will exchange registration information with the State Environmental Protection Administration according to a fixed schedule.

Article 10: When the State Environmental Protection Administration examines and approves applications for environmental protection registration regarding the first import of chemicals, it will grant environmental management registration permits to chemicals that meet requirements, and will issue the "Environmental Protection Registration Certificates for Import/Export of Chemicals," to allow their import. No registration will be performed for the chemicals that, on examination, are

found to be unsuitable for import into China, and the applicants will be so notified.

For a chemical that is imported for the first time, and on examination is deemed to require more testing and a longer period of observation in order to determine its degree of danger, temporary registration can be performed, and a temporary registration certificate can be issued.

The chemicals that have not obtained environmental management registration certificates for the import of chemicals, or temporary registration certificates, cannot be imported.

Article 11: The environmental management registration obtained by a foreign businessman or his agent during the first import of a chemical to China will be valid for five years; if a request for extension of the registration is required before the valid period expires, the original applicant should file an application to renew the registration six months ahead of the date of expiration.

A temporary registration is valid for one year, and a decision should be made before the date of expiration on whether to grant formal registration. Under special circumstances—and with approval from the registration department—an extension can be granted, but not for more than one year.

Article 12: Each time a foreign businessman or his agent exports to China any industrial chemicals or pesticides listed in the "Category," or when someone inside the country imports such chemicals from a foreign country, he must file an application for environmental management registration regarding the import of toxic chemicals with the State Environmental Protection Administration. For those chemicals that are allowed to be imported, the administration will issue the "Environmental Management Registration Certificate for Import/Export of Chemicals" and the "Environmental Management Note of Advice on Allowing Import/Export of Toxic Chemicals To Pass Through" (the "Note of Advice" for short). The "Note of Advice" follows the system of one note for each batch, and each "Note of Advice" can be used for customs clearance only once within its period of validity.

Article 13: To apply for the export of chemicals listed in the "Category," one must file an application with the State Environmental Protection Administration for environmental management registration regarding the export of toxic chemicals.

After receiving the application, the State Environmental Protection Administration should notify the department in charge in the importing country, and after receiving a notice of approval for import from the department in charge in the importing country, will issue to the applicant the "Environmental Management Registration Certificate for Import/Export of Chemicals," which allows the export of toxic chemicals. Concerning chemicals for which the department in charge in the importing country

does not give import approval, no registration will be performed, no export will be allowed, and the applicant will be so notified.

Article 14: The "Environmental Management Registration Certificate for Import/Export of Chemicals" signed and issued by the State Environmental Protection Administration must have a stamp from the PRC State Environmental Protection Administration approving environmental management registration regarding the import and export of chemicals. A green "Environmental Management Registration Certificate for Import/Export of Chemicals" is granted to an applicant who wants to import or export a toxic chemical listed in the "Category." A pink "Environmental Management Registration Certificate for Import/Export of Chemicals" is granted to a foreign businessman or his agent who wants to export a chemical to China for the first time. A temporary registration certificate is white.

Article 15: The first page of the "Environmental Management Note of Advice on Allowing Import/Export of Toxic Chemicals To Pass Through" will be kept by the State Environmental Protection Administration. The second page (the original) will be given to the applicant for customs clearance purposes. The third page will be sent to the State Administration for Import and Export Commodity Inspection.

Article 16: The verification period for an application for environmental management registration regarding the import and export of chemicals begins from the day the application is filed with information meeting the requirements for registration. The verification period for an application for registering the first import of chemicals will not exceed 180 days; the verification period for an application for registering the import and export of the toxic chemicals listed in the "Category" will not exceed 30 days.

Article 17: When the State Environmental Protection Administration examines and approves an application for environmental management registration regarding the import and export of chemicals, it has the power to question the applicant and to ask him to supply more relevant information.

The State Environmental Protection Administration should keep the technological secrets concerning the information and sample provided by the applicant.

Article 18: The State Environmental Protection Administration takes sole charge of the printing of the application forms for environmental management registration regarding the first import of chemicals, the application forms for environmental management registration regarding the import and export of toxic chemicals, the environmental management registration certificates for the import and export of chemicals, temporary registration certificates, and the environmental management note of advice on allowing the import and export of toxic chemicals to pass through.

Chapter IV—Prevent Environmental Pollution in Ports

Article 19: Classification, packaging, labeling, and transportation of chemicals during import and export are to follow the relevant regulations on the transportation of dangerous goods in the international community and in the country.

Article 20: During the process of loading, unloading, storing, and transporting chemicals, it is necessary to adopt effective precautionary measures to prevent environmental pollution.

Article 21: In case of pollution or possible pollution of a port due to damage to package or failure to meet packaging requirements, the department in charge of the port should take immediate measures to prevent and clear the pollution, and should inform the local environmental protection department promptly, so as to carry out investigation and handle the case. The expense incurred during prevention and clearing of pollution will be paid by the person responsible for it.

Chapter V—Punishment

Article 22: Those who violate these stipulations, and those who import and export chemicals without performing environmental management registration regarding the import and export of chemicals, will be fined by the customs departments according to the relevant rules of customs administrative sanction procedure, whereas those involved will be ordered to perform the registration procedure that has not been performed, and those who perform such registration procedure later but fail to get approval, will be ordered to send or take their goods back.

Article 23: Those who cause pollution to China's ports when importing and exporting chemicals will be punished by the local environmental protection departments.

Article 24: Those who violate the state's foreign trade control regulations when importing and exporting chemicals will be punished by the foreign trade departments according to the relevant regulations.

Chapter VI—Supplementary Articles

Article 25: A chemical that is imported for the first time for experimental purposes is exempted from registration provided the annual import volume is less than 50 kg. (Chemicals listed in the "Category of Toxic Chemicals Banned or Strictly Restricted in China" are not included.)

Article 26: The method of collecting fees for environmental management registration regarding the import and export of chemicals will be drafted later.

Article 27: The interpretation of these stipulations rests with the State Environmental Protection Administration.

Article 28: These stipulations will be implemented beginning 1 May 1994.

JAPAN

Tokyo Favors Compromise on Antarctic Whale Sanctuary

OW1805090794 Tokyo KYODO in English 0829 GMT 18 May 94

[Text] Tokyo, May 18 KYODO—Japan may accept a French proposal to create a whale sanctuary in the Antarctic Ocean if it will exclude minke whales, Fisheries Agency officials suggested Wednesday [18 May].

Japan expects a compromise to be made on the proposal to be put to a vote at the International Whaling Commission (IWC) annual conference in Mexico from May 23 to 27.

"It is natural to protect more than 10 kinds of large whales as resources but (the IWC) can set up a sanctuary by limiting its term and its scope," a senior official of the agency said.

He suggested that minke whales, which Japan wants to hunt commercially, be excluded from the proposed sanctuary.

Japan is opposed to the French proposal to designate Antarctic waters south of the 40th parallel as a sanctuary for whales for 50 years.

The last IWC conference, held in Kyoto, western Japan, failed to gain enough votes to adopt the proposal due to opposition from nations supporting commercial whaling such as Japan and Norway.

Antiwhaling groups including Greenpeace International have said the proposal is likely to be adopted at next week's Mexico meeting.

The 46th IWC General Assembly meeting will be held in the Pacific coast resort town of Puerto Vallarta.

Japan stopped commercial whaling in 1988 following an IWC ban.

Panel Urges Greater Efforts To Protect Environment

OW1805030594 Tokyo KYODO in English 0215 GMT 18 May 94

[Text] Tokyo, May 18 KYODO—An Environment Agency panel has drafted a new long-term program calling for greater involvement by individuals, businesses and the government in efforts to protect natural surroundings from industrial pollution.

KYODO NEWS SERVICE obtained a copy of the draft program sketched out by the agency's central environmental council, headed by University of Tokyo Professor Emeritus Jiro Kondo.

The draft says, "the expansion of human social and economic activities...led to the excessive use of natural

resources so as to nullify the environment's ability to restore original levels of the resources, while depleting wildlife and reducing its ability to survive."

"It also triggered pollution of the environment by expanding the discharge of unnecessary waste," it said.

"It is also important to defend and preserve the environment by conquering the sort of environmental destruction attributable to modern lifestyles in cities," it said.

The draft urged the public in developed countries to "question the current mode of civilization where prevailing values have encouraged mass production, huge consumption and the subsequent vast discharge of waste into the environment."

The report also urged individual members of Japanese society to "take action" useful in staving off environmental deterioration.

However, it stopped short of setting numerical targets and specific timetables that could be referred to as yardsticks for attaining the cleanup of contaminated areas.

The report also urged the government and local communities to step up efforts to preserve and protect small forests in cities that have survived the rapid urbanization of Japan.

It cautioned that such forests, beaches and paddy fields in mountainous areas are on the brink of losing their natural capabilities to provide shelter to small animals and to clean up contaminated water.

The draft also urged efforts to prevent wildlife not native to Japan, like the black bass, from damaging Japan's ecosystem. Such wildlife have infiltrated the Japanese environment following their intentional or unwitting importation, the report said.

IWC Delegation Head Vows To Block Antarctic Whale Sanctuary

OW1205105394 Tokyo KYODO in English 1015 GMT 12 May 94

[Text] Tokyo, May 12 KYODO—Japan will "do its utmost" to bloc a proposal for a whale sanctuary in the Antarctic Ocean, the head of Japan's delegation to the May 23-27 International Whaling Commission (IWC) annual conference in Mexico said Thursday [12 May].

Kazuo Shima, who is deputy director of the Fisheries Agency, told a group of 400 whaling industry supporters dining on whale meat at the Parliamentary Museum in Tokyo that the antiwhaling movement has no "scientific basis."

He said Japan will rely on established scientific facts to push its case at the 46th IWC General Assembly meeting in Puerto Vallarta on the central Mexican Pacific coast.

"The arguments put by the antiwhaling movement lack any scientific basis," Shima said. "You might as well say they are a religion."

"If the proposal for a sanctuary is adopted, this sort of thing will spread to all oceans around the world," he said. "If this is introduced, we will have to think from basics about our relationship with the IWC. We will do our utmost to block it."

Participants at the meeting, convened by the "society to protect whaling tradition and cuisine," included members of opposition and governing coalition parties, officials from the Japan Whaling Association and the Institute of Cetacean Research, as well as writers and entertainers.

The society's members want the IWC to permit a resumption of commercial whaling by Japan.

Japan stopped commercial whaling in 1988 following an IWC ban.

SOUTH KOREA

Report on Air Pollution in Seoul

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[Report on a joint air pollution test in Seoul conducted by SISA JOURNAL and the PAEDAL Environmental Union on 24-25 March]

[Text] Seoul is the second most polluted city in the world. This is a result of the WHO's examination of air pollution in the 20 largest cities in the world. The entire domestic press was astonished at this unpleasant news reported in December 1992. However, that was all. This serious fact has been forgotten by the government, the press, and the people as a year and four months have passed since the news was reported. When the phenol incident occurred, and when rotten water was collected in the upper waters of the Nakdong River, a tap-water source, people were concerned about the contamination of the "visible" water. They, however, did not worry about the contamination of the "invisible" sky.

At least in the ROK, air pollution does not attract people's attention or the environmental authorities' measures against it, compared with water pollution. There is a particular reason why the air pollution in metropolitan cities such as Seoul can avoid the keen eyes of today's people who are sensitive to health. This is because the weather of those cities changes rapidly. The air pollution rate of each time zone of a day is different due to a big gap between day and night temperatures. Snow or rain clears smog in the air no matter how thick it is. Contaminating materials do not stay in one place because of the ceaselessly blowing wind. In fact, a report says that a contaminating material created in Incheon at 0600 arrives on the coast of the East Sea at 2200.

Paradoxically, however, air pollution is more dangerous and fatal than water pollution because of these attributes. Scholars say: "Post-measures can be taken for water pollution, but not for air pollution because the latter can kill a large number of people all of a sudden. The moment when an air pollution-related incident occurs is the moment of ruin." If various contaminating materials exceeding environmental standards drift in the air for a certain period of time one day without snow, rain, or wind, a disastrous incident may occur in front of us. The 1952 "London Smog" incident, in which more than 4,000 people were killed over a few days, thus astonishing the world, is a good example.

This is why SISA JOURNAL conducted an air pollution test in Seoul. The magazine believes the customs like locking the stable door only after the horse is stolen that were repeatedly confirmed whenever frequent incidents involving water contamination took place must not be repeated in coping with air pollution. The trial-and-error principle is not applicable in handling air pollution. We have not heard any report on the refreshment of air in Seoul since the city disgracefully ranked as the second most polluted in the world. Instead, we only hear the uneasy news that contaminating materials of a backward country are blowing from China. Therefore, SISA JOURNAL decided to examine the actual status of air pollution in Seoul with all possible means.

Carbon nitrogen and sulfuric acid gas, which are major air pollutants, were intensively measured in the recent test. Ammonia gas, which is not very harmful to the human body but annoys people with its bad smell, was also measured. Currently, carbon nitrogen, sulfuric acid gas, ozone, and ammonia can be measured with simple meters. Accordingly, all major air pollutants that are measurable with simple meters, except ozone, were measured in the recent test. SISA JOURNAL could not make a survey of all contaminating materials in the air. Therefore, this survey had to be subject to limitations in that civilian organizations had conducted it.

The survey team of SISA JOURNAL set the 24-25 March as the date for jointly examining the air pollution situation throughout Seoul in cooperation with Paedal Environmental Union. It had, however, conducted many preparatory surveys to examine the air pollution situation in Seoul before 24-25 March. At ten o'clock on the evening of 24 March, approximately 100 survey team members from the SISA JOURNAL began to set up 400 simple measuring instruments on the selected areas throughout Seoul, but it took 24 hours to complete them because of snow that fell that night. Therefore, it could examine the air pollution situation only after the contaminating materials were removed by snow. According to a master's thesis released by Kim Chong-ku, student of the Graduate School of Environment at Seoul National University, in February 1994, the density of carbon nitrogen in air can be greatly decreased between 5 ppb [parts per billion] and 20 ppb depending on the amount of snow or rain (1 ppb equals 0.001 ppm [parts per million]).

As a result of the survey, it is reaffirmed that the key contaminants of air pollution has changed. The amount of sulfurous acid gas in air—which has been so far regarded as a key contaminator of air pollution throughout cities, small or large—has been greatly decreased to below the environmental standards drift, while carbon nitrogen—which is produced from car exhaust pipes—has gradually increased. This is the current situation throughout the cities. Although the survey was conducted in the clear weather of that day, the sulfurous acid gas drift (average environmental standards drift is 80 ppb per day) given by the survey showed the lowest point was 65.9 ppb, while the highest point was 8.2 ppb from a total of 186 measuring spots. Also, the carbon nitrogen value given by the survey showed that the highest point was 83.6 ppb, while the average point was 42.9 ppb from a total of 340 measuring points.

Carbon Nitrogen Can Produce Materials Causing Cancer

These drifts could be also found in the documents recently issued by the Ministry of the Environment, which has examined the air pollution situation throughout cities over past several years. The houses built for coal briquet [yontan] purposes have been changed into ones that can use gas. The number of cars has greatly increased every year. Because of these factors, air pollution in Seoul has been further aggravated. The model of the air pollution condition in Seoul is similar to that of developed countries by escaping from the framework of underdeveloping countries. However, we cannot express relief only because the air pollution situation in Seoul is similar to that of developed countries. This is because there is nitrogen oxide in the air—which is similar to carbon nitrogen—which produces photochemical smoke [kwanghwahak sumogu], thus reacting to sunlight.

Considering carbon nitrogen alone, the air pollution situation in Seoul has not reached a point that we need to worry. However, the average drift of the carbon nitrogen density in Seoul that was examined on 24-25 March reached 42.9 ppb. This drift is far below the average environmental standard drift (80 ppb). The area of Chongyang-ri station in Seoul is the only one that exceeded the environmental standards drift of carbon nitrogen.

However, this result can be greatly different only if we apply it to Japan's environmental standards drift. Some Japanese local groups have regarded 40 ppb as their average environmental standard drift in a day, while regarding 60 ppb as their highest value. It is not right to simply compare the air pollution situations in Seoul to that of Japan, but it is a problem if the environmental standard drift of carbon nitrogen in Seoul exceeds that of Japan. Furthermore, considering the drift of the survey, which was conducted in clear weather after heavy snow fell, we can easily guess how the air in Seoul is seriously polluted on a normal day. There is no study that the Koreans are stronger than the Japanese in overcoming air pollution.

One can suffer pain in his throat when one is exposed to carbon nitrogen between 200 and 700 ppb for 20 minutes. Except those who work in a special working place, ordinary people will not suffer pain from the carbon nitrogen of those drifts. However, if carbon nitrogen reacts with other chemicals in the air, unpredictable and difficult situations may occur. In other words, it is possible that nitro-chemicals that cause cancer can be produced as a result of the combination of carbon nitrogen—which is produced from car exhaust pipes—and hydrocarbon, such as benzol. It seems that carbon nitrogen has increased the rate of cancer growth as a result of such chemical reactions. The reason we set the environmental standard drift is due to our apprehension over air pollution throughout the country.

Is the Government's Automatic Measuring Network Reliable?

In Seoul, there are 10 automatic air pollution measuring spots operated by the Ministry of Environment and another 10 by the Seoul Municipal Government. Environmental groups have persistently raised the issue of the fact that data from these automatic measuring networks are the only source for the government to study and manage air pollution. The question is whether the data from the automatic measuring networks accurately reflect the level of air pollution.

On the night of 24 March, SISA JOURNAL installed a number of simple measuring instruments near 15 of the 20 spots where automatic measuring networks are located. (Five of the 20 measuring spots are constantly not operating because of regular checks.) This was to check whether the results from the automatic measuring networks represent the level of air pollution in that area. The density analysis of nitrogen dioxide collected by simple measuring instruments was significantly different from the value given by the automatic measuring networks.

The nitrogen dioxide value given by the automatic measuring networks on 25 March showed the lowest point was registered in Kwanghwamun (12 ppb) and the highest in Sinsol-tong (33 ppb) while the result from simple measuring instruments in Sinsol-tong was 37.2 ppb and in Kwanghwamun 41.8 ppb. Pulkwang-tong was the only area where the value registered by the simple measuring instrument was lower than that of the automatic measuring network. In other 14 areas, results from the simple measuring instrument were higher than those of the automatic measuring network by 1.13 to 4.62 times. The difference of nitrogen dioxide value from the simple versus the automatic measuring instruments by area is in the following order: Taechi-tong (60:13), Kwanghwamun (41.8:12), Songsu-tong (38:14), Kuui-tong (56:21), Ssangmun-tong (48.2:18), Sillim-tong (33.9:14), Chamsil-tong (41.4:23), Pangyi-tong (36.1:21), Hwagok-tong (33.6:23), Mapo (34.6:24), Namgajwa-tong (38.8:27), Myonmok-tong (37.2:29), Panpo-tong (37.2:31), Sinsol-tong (37.2:33), and Pulkwang-tong (26.6:32).

How can we explain the maximum 4.6 times difference? Since "the low in difference" principle can be applied to the air pollution value, in format theory, either one of the two measurements was correct or both were incorrect.

The statistical advantage of the simple measuring instrument is that it can measure pollution in places where measuring is difficult and it can gather various data in a certain area. Of course, some people question the accuracy of the simple measuring instrument. However, it is difficult to accept the fact that the nitrogen dioxide value of Kwanghwamun, where traffic is one of the busiest, was the lowest in Seoul.

Therefore, the management of the automatic measuring networks should be checked. Maybe the problem was that the automatic measuring instruments are not being properly maintained rather than that the instruments have their own defects. For instance, the notch on a balance must be at zero in order to accurately measure the weight. Keeping the notch of a pollution measuring instrument at zero is called "revision." If an automatic measuring instrument's record becomes drastically high after revision when there is no specific weather change, that means that the automatic measuring instrument was not normal before the revision.

This problem was shown in the statistics regarding the trend of nitrogen dioxide monitored by an automatic measuring instrument in Taejon city in January 1994. The revision date was 23 January. The pollution density of nitrogen dioxide was 8 ppb on 22 January, 3 ppb on the 23d, but drastically increased to 31 ppb on the 24th, 58 ppb on the 25th, and 57 ppb on the 26th. The fact that the values before and after the revision have such a significant difference makes the function of the automatic measuring instrument doubtful. If the government continued to use such incorrect automatic measuring networks, this means, as far as air pollution is concerned, the government has provided incorrect information to the people to avoid condemnation.

Usually, the causes of pollution are considered to verify the geographical characteristics of a certain pollutant. In this survey, the average pollution rate of nitrogen dioxide, which is produced during the process of cars burning fuel, thermal power plants, heaters, and gas stoves, was 49.5 ppb in subway stations, 38.7 ppb in street shops, 38.3 ppb on roads, 34.3 ppb in residential areas, 32.3 ppb at parks, and 28.6 ppb in schools. Chongnyangni station area recorded the highest at 83.6 ppb, followed by an office in Socho-tong, Socho-ku (79.2 ppb), a hill in Pongchon-tong, Kwanak-ku (78.4 ppb), and City Hall subway station (78 ppb).

Apkujong Subway Station Twice as Polluted as Streets

One notable point of this survey is that subway stations were shown to have been more polluted than the streets. It is difficult to find a particular pollutant source that might produce nitrogen dioxide in subway stations. However, they showed a higher rate than streets, which are constantly being polluted by automobile exhaust. For

instance, the average ppb of 10 spots in Mukyo-tong, Chung-ku was 35.1 while that of the underground arcade in the same area was 45.9. Streets near Apkujong station in Kangnam-ku was 37 ppb while the subway recorded as high as 70.4 ppb. Figures monitored from inside subway stations were 1.5 to two times higher than upper streets. The reason is simple. Ventilation problems. Nitrogen dioxide produced in the streets is sent to underground spaces through inlets and is accumulated there due to poor ventilation equipment.

Nitrogen dioxide pollution rates in the streets vary from 8 ppb to 83.6, but are generally high. The big difference reflects the difference between high-traffic and jammed main roads and low-traffic alleys.

Another notable point is that inner spaces with gas stoves had a higher rate. SISA JOURNAL conducted another test in one office on 4 April and discovered different results in one office depending on the measuring point. A certain point showed 38.4 ppb while another point showed a rate as high as 110.7 ppb, much higher than the standard environmental figure.

Ammonia is excluded on environmental check lists because it is not too harmful to humans, but is a pollutant with a strong odor. Because it can be easily detected by simple measuring instruments, SISA JOURNAL installed the instruments at 290 spots along with nitrogen dioxide measuring instruments. The result shows very high pollution rates in sewage, manholes, trash cans, and markets near the measuring spots. Among the measured areas, residential areas in Amsa-tong, Kangdong-ku had the lowest rate at 15.5 ppb, while streets in Pongchon-tong, Kwanak-ku had a pollution rate as high as 254 ppb. Air pollution is not visible, cannot be felt, and has a characteristic of being chronic when even a very small amount is accumulated in the human body. People say that if they wear a shirt even for just one day in the city it gets dirty. Therefore, they say that "the air has worsened" based on such an experience. However, they do not know why and how much it has worsened. The government does not know either. We call this the so-called 'Seoul-type smog,' but we have not yet found the cause for this. Since symptoms do not appear immediately, there is a high possibility that polluted elements will slowly accumulate in our bodies, thus leading to a chronic disease.

There are only two ways to deal with air pollution. It must be measured accurately and its exhaust must be controlled. However, we are still far off from controlling exhaust under the current situation. It is possible to control power stations and industrial facilities. The problem is automobiles and domestic heating. These are responsible for from 70 to 80 percent of all the carbon dioxide pollution.

Of all the automobiles, 36 percent are run by diesel, the 'cause of pollution.' This is the highest percentage in the world. This is because the restriction for emitting gas is too lax and the price of diesel oil is much cheaper

compared with gasoline. Another reason is because the management of domestic heating is not being carried out well. Moreover, the main cause of air pollution is now due to nitrogen oxide. This is truly due to the trend of the times. In a survey, a 'horrible' study was made in which 50 people out of 100,000 who live in a city in Germany, where there are much less diesel automobiles than the ROK, will suffer from cancer due to diesel pollution.

Therefore, under the current situation, we must at least be accurate in 'measuring.' This is the same as the proverb: We can become the chief of a town only when we know what the duties are. The government's announcements on the matter of air pollution is difficult to believe. This is because the state has almost no materials at all about this. During an interview with a professor studying air pollution in the process of gathering news on this matter, he said: "The government will pay attention to this matter only after an incident occurs regarding air pollution." Work investigating the "nationality" (origin) of air pollutants is currently under way in Korea. The Environmental Research Center of KIST (Korea Institute of Science and Technology) and Cheju National University began joint research work on 11 March by measuring the long-distance movement of air polluting substances. The investigation is being conducted at the Alpine Observation Station on Suwolbong located at Hankyong-myon, Puk-Cheju-gun, Cheju Province, on a three-year schedule.

The Alpine Observation Station on Cheju Island was selected as the measuring point because it is located in a typical "clean air area" of Korea, with easy access to meteorological data from the nearby radar of the Meteorological Observatory. In the capital area, including Seoul, the air pollution degree is so severe that it is impractical to distinguish whether pollutants are of native or foreign origin.

This research of ascertaining the source of air pollutants provides very essential data and materials needed by the government in establishing its environmental policy. Dr. Sim Sang-kyu of the Environmental Research Center, who is participating in the survey, said that "the research will be a great help, particularly in assessing how much influence China has on air pollution here in Korea."

China depends on coal for approximately 75 percent of its energy consumption. Of the world total coal production of 4.5 billion tons, about 1 billion tons are produced in China. Over 90 percent of its coal consumption is for fuel. It is evidently clear that the emission of sulfurous acid gas is estimated at 16 million tons (on a 1991 basis), which is more than 15 times the figure in Korea. Even the National Environmental Protection Bureau of the PRC once expressed its concern in these words: "In China, the discharge of sulfurous acid gas is bound to grow sharply with the boost in its coal production, and the hazards of it may spread to neighboring countries." (SISA JOURNAL, Vol. 175)

At one point, Japan published the result of research which claimed that more than 50 percent of acid rain fall in that country is influenced by China. Korea has only estimated the influence at about 30 to 50 percent, but has been unable yet to present any research result to back it up. The general interest and concern in the phenomena of yellow sand, which had been taken as just a natural phenomena repeated each year over several centuries, has abruptly risen, coinciding with the rapid progress in China's industrialization. There are even some expressing concern that some heavy metal pollutants may fly into this country as they are mixed with yellow sand.

The air pollution in the skies of Northeast Asia, such as in Korea, China and Japan, is now in a very serious state. Last March, the National Aeronautics and Space Administration (NASA) and the Pacific Area Environmental Research Institute of Nagoya University of Japan jointly conducted a survey on the degree of pollution in the skies of the Pacific Ocean. According to the survey, it was found that the density of pollutants in the skies of the west Pacific region, such as China and Japan, was from five to 10 times higher than in the skies of the east Pacific. The survey teams have estimated that these pollutants originated from mainland China.

In determining movement courses of air pollutants under this plan, not only Korean institutions, but also Japan's Natural Environment Research Institute and Kyushu University as well as American universities (in California) will jointly participate. So much is the target of interest among many countries to scientifically and accurately ascertain the origin, ingredients, and quantities of pollutive substances.

Various countries in Europe already concluded the "agreement on long-distance movement of air pollutants" in 1979. The U.S. and Canada also signed the agreement on reducing acid rain-causing substances in 1991. The data and materials being made available through this survey that began this year, will provide valuable data for environment-related agreements by Korea, China and Japan in the coming days.

The Korean research team plans to devote their energy first on ascertaining the courses of movement, kinds, and distribution of air polluting substances. Ascertaining their chemical ingredients or poisonous character will be of a secondary consideration. The United States and Japan have steadily accumulated the related research data for a long time, but Korea has almost no data accumulated in that respect.

It is as important to ascertain the vertical and horizontal distribution of air polluting substances as it is to learn their course of movement. This measurement work is also being promoted for the first time this year. The results of this survey will be used for basic data required for long-range planning.

The aircraft used in the measurement work is the four-seater light plane called "Changgong 91," developed by Korean Air. This light plane is scheduled to fly over the

west coast areas, centering around the Taean peninsula in South Chungchong Province, twice on days when the yellow sand phenomena occurs and once on the other days.

This study is conducted under the research plan "concerning the influence of yellow sand and long-distance moving pollutants on Korea," of which a contract order was given by the Ministry of Environment last October. This study will chiefly investigate the effect of yellow sand from China. O Sung-nam, director of the Earth Environmental Information System Laboratory of the Systems Engineering Research Institute, says: "The prevailing westerlies always blow in Korea. The country, therefore, is bound to be affected by the China continent. We have to distinguish the original source of the polluting substances at the earliest possible date. Otherwise, there is concern that Korea may be mistaken for a major source of air pollution."

The survey team expects that they will be able to learn not only the yellow sand distribution and total volume of it in the skies of the East Sea and Seoul, but also the kinds and influence of air polluting substances migrating with yellow sand. Dr. O said, "This aerial measurement will provide momentum for continuing our comprehensive and systematic research."

There are some, however, who contradict the "presumption" that yellow sand carries toxic pollutants of the industrial districts of mainland China to this country. Dr. Sim Sang-kyu of KIST says, "Since the courses of yellow sand and air polluting substances are different from each other, the story that yellow sand transports heavy metal lacks credibility." Sim maintains that what they have mistaken for heavy metal refers to the extremely small quantities of heavy metal contained in yellow sand.

He says: "Yellow sand rather plays the role of blocking air pollution. Positive ions, such as calcium and magnesium contained in earth, work to neutralize acid rain." Prof. Yi Tong-su of Yonsei University in his dissertation once disclosed that the quantities of yellow sand that falls in Korea are large enough to completely neutralize acid rain.

At any rate, through the aerial measurements, the correlation between the yellow sand phenomena and air pollutants will be unveiled. The measurements this year will likely have more symbolic meaning as "the first attempt ever made in Korea" than as any substantive research results. It is because the equipment mobilized and budget funds earmarked by the Environment Ministry are not sufficient enough to obtain reliable research.

The flight duration of "Changgong 91" is limited to three hours, and the flight altitude ceiling barely reaches 2 km. As such, the aircraft is considered unfit for measurement of air pollution. The sample gathering equipment on the plane is better than that used by the National Environment Research Institute, but it takes very long to accumulate samples needed for making a complete specimen set.

"In the United States and Japan, a medium-size airplane is usually used for measurement over 20 hours. As

compared to them, we are just in a rudimentary stage of study. It might be hard to expect any satisfactory results through this measurement project," Dr. O said.

The government is also taking seriously the influence of air pollution in China on this country. The "meeting of earth environment-related ministers for countermeasures to cope with the situation," held on April 11 demonstrates this fact well. At the meeting, they said that the government would study some plans to expand the environmental cooperation between Korea and the PRC to reduce air polluting substances coming from China. Korea signed the Environmental Cooperation Agreement with the PRC last October, but concrete measures have yet to be established. The study on the air pollutant movement, which began last March, and the aerial measurement of yellow sand, which will begin shortly, will mark the initial steps toward working out countermeasures.

The Yokkaichi incident was a typical example of the courses taken in solving the problems of environmental pollution after Japan's industrialization and economic growth. Yokkaichi is where Japan's first petrochemical industry complex was developed. Because of noxious gases belching out from chimneys in the complex, the inhabitants of the nearby areas came to suffer severe respiratory diseases, such as asthma.

It was in 1959 when the damage from noxious gases and soot/smoke from those chimneys first surfaced as a social problem. The Federation of Self-Government Associations in Shiohama, a village adjacent to the industrial complex, filed a petition with the Yokkaichi City authorities. "Because of the noises and soot/smoke from the industrial complex, we just cannot sleep at night," the petition said. Despite such petitions, damage from air pollution grew increasingly serious day after day. In July of that year, Yokkaichi City inaugurated the Yokkaichi Antipollution Committee as an advisory board to the mayor. The committee requested the Medical Department of the Mie Prefectural University to conduct a survey on causes of the damage.

Based on the results of this survey, the antipollution movement by the inhabitants began on a full-fledged basis. The occupant industries' emission of air polluting substances continued, however. For instance, Mie thermal power plant established its incinerator, the largest of its kind in Japan, which is exclusively used for heavy oil. Mitsubishi Petrochemical sharply increased the production scale of its products. As manufacturing activities stepped up at their facilities, which are equipped with no proper antipollution equipment, the damage suffered by the populace in the nearby areas grew even more. Their movement designed to get assurances for human health, life and safety continued even more strongly.

As a result of such endeavors, the Japanese Government in 1963 launched its surveys by designating Yokkaichi areas as those subject to the application of the "Soot and

Smoke Regulation Act." On the basis of this survey, the Japanese Government proclaimed that Yokkaichi was subject to the law.

The Yokkaichi Antipollution Committee, consisting of experts in the area, has contributed greatly to solving the problems by accurately pointing out the following major problems: namely, that the petroleum fuel ratio in the industrial complex is extremely high as compared to other industrial complexes, that the pollution damage suffered by the populace is severe because factory and residential areas are mingled together, that managers of those factories have made almost no effort to prevent pollution, and that the plant layout had been made totally ignoring the seasonal wind changes.

In the last analysis, the inhabitants in the areas took the lead; the group of experts ascertained problems and presented some scientific plans for solution. In so doing, the government, local autonomous bodies, and businesses came to participate in resolving the problems. As a result, the air pollution level in the Yokkaichi area could be brought down below the permissible standards.

In the United States, exhaust fumes from automobiles chiefly in Los Angeles emerged as a great social problem in 1950. Exhaust fumes containing carbon monoxide, hydrocarbon, and nitric acid compounds themselves are harmful substances. By reacting with sunlight, they generate large-scale photochemical smog.

To cope with this, President Nixon in 1970 proposed a plan to reduce exhaust gas from automobiles. Senator Nelson proposed even more powerful measures to prevent air pollution. Democratic Senator Muskie's bill was a compromise between the proposals made by Nixon and Nelson, and was formally adopted in 1975 to reduce harmful substances in automobile exhaust fumes by 90 percent.

In Japan, the Central Antipollution Measures Council in 1972 established its plan to reduce exhaust fumes from automobiles, centering around details of the Muskie bill. This plan was designed to drastically reduce the discharge of nitric acid compounds from passenger cars by 1976. It was an almost unattainable goal with Japan's automobile production technologies at that time. Japanese automakers, such as Toyota and Nissan, filed petitions, asking for a postponement of enforcement of the regulations. As a result, the Japanese Government decided to put the regulations into force beginning in 1979.

Two major characteristics could be seen in the development of Japan's automotive industry technologies during the 1972-78 period. The first point is that the rigid environment policy actually led to development of its high technologies. How to cope with the regulation of exhaust fumes eventually boils down to technological developments. It could not but be increasing the engine efficiency of combustion. Japan eventually succeeded in developing low fuel-ratio engines with high power output, and came to sweep over the world automobile market.

As compared with this example in other countries, Korea has been rather backing away from an environmental policy, for what is professed to be an economic revival. This suggests a lot about how our way of thinking is shortsighted. Some rigid environmental policy helps develop high technology and clean environmental technologies. We must realize that such a policy can be the most positive way of effectively coping with environmental barriers, such as the upcoming Green Round negotiations.

A certain industrial size facilitates the permeation of the environmental policy of the state. For instance, in the early 1970's, the automobile industry of Japan lagged far behind the world's technology level, and it could not take any significant position in the Japanese economy. Its automobile exports to the United States barely accounted for about 15 percent of production. At that time, in the Japanese economy, the steel, chemical, nonferrous metal, and other basic resources-type industries were at the height of prosperity.

Therefore, when the Japanese Government established a policy for the rigid control of exhaust gas from automobiles, the Japan Automobile Industry Association lacked enough power to reject it. The only choice left for the industry was to develop its technology to cope with the situation. This sharply contrasts with the fact that around that time, the American Automobile Industry Association could successfully have postponed the enforcement of the Muskie bill, and that the Japanese Steel Industry Federation succeeded in having the environmental standards on nitric acid discharged from steelworks relaxed.

At that time, the Japanese automobile industry was too weak in terms of industrial scale and productivity, to reject the government's environmental policy, but still had enough strength to barely manage to develop new technologies. On the other hand, in our case, the scale of the automobile and other industries has grown too large, and the government's environmental policy is not readily accepted by them. Before it is too late, we have to do something to resolve this air pollution problem. To this end, the Korean Government will have to unfold even more powerful, rigid environmental policies. Yet, such policies should not lean only towards regulation. The government should provide various favorable conditions so that the businesses themselves may develop their own clean environment techniques.

What measures to reduce air pollution does our government have at present? First, for reduction of exhaust fumes from automobiles, the government has been studying the following measures: to reduce smoke and soot from diesel-fueled vehicles and develop low-pollution autos, improve the quality of automobile fuels, and enforce the aggregate-amount regulation of exhaust gas from automobiles. For reduction of sulfurous acid gas, it has been promoting the compulsory use of clean fuel, expansion of the areas where low sulfuric acid gasoline is supplied, as well as the collective energy

supply facilities, and the introduction of the aggregate-amount regulation of sulfuric acid gas.

In order to reduce dust, the following plans are now under discussion: to regulate businesses that generate flying dust and reinforce the standards for installation of dust collecting equipment, and a master plan for reducing dust in major cities. It also plans to guide industrial facilities emitting pollutants in large quantities in establishing desulfurization equipment, to efficiently control industrial facilities discharging air pollutants, and encourage private organizations to participate in the guidance for and checking of pollutant discharging facilities. It has also been hastening the work in the area of expanding the air pollution gauge networks and improvement of the control system.

The problem, however, lies in the definite willingness of the government and its authorities concerned and in the possibility of translating policy into practice, and the transparency of the policy, most of all. How can air become clean when the government has no willingness, lacks budget funds, and has a shortage of necessary human resources?

There are many ideas to resolve the air pollution issue. According to Kim Chong-tal, director of the Energy Management Industry Research Laboratory of the Energy Economic Research Institute, the following measures are needed to fundamentally resolve the problem. In the industrial sector, which accounts for 53.8 percent of the total energy consumption, efforts must be made to build low energy-consumption types of industrial structures, develop technology for improvement of energy efficiency by type of industry, and step up the development of new energy-saving products.

In the control of demand in the transportation industry sector, the measures proposed include building energy-saving types of transportation, establishment of composite cargo terminals, and formulation and enforcement of plans for energy-saving types of land utilization.

According to the results of research conducted by Pak Yong-hun, director of the Urban Traffic Research Institute, the transportation systems should be built chiefly centering around railways and mass transit. Other alternatives suggested include the development and supply of low-pollution vehicles, supply of small automobiles, construction of bicycle roads and expanded supply of bicycles, construction of roads in consideration of ecology, and absorption of the traffic demand by the information and communications industry.

The Paedal Environment Federation, which is a private environment organization, has been regularly conducting simplified air-quality measurements. This work is considered a new attempt to ensure the joint ownership of information on the environment, which has been hitherto monopolized by the government, upgrade the citizens' participation in the antipollution drive, and

supplement the automatic air pollution gauge networks, which are currently in an absolute shortage across the nation.

Practically, there is no way of easily resolving the air pollution issue. The best possible way will be to gradually reduce pollutants from the very sources, such as industrial plants, thermal power plants, automobiles, and household heaters and air conditioners. To this end, individual citizens are encouraged to actively economize on energy consumption and participate voluntarily in the "car-holiday system according to the last digit of the license plate number" (if the last figure is 0, the system calls for keeping the car in the garage on the 10th, 20th and 30th days of each month). Business corporations for their part should endeavor to develop and adopt clean environment technologies. The government on its part should make even more strenuous efforts to supply clean fuels on an expanded scale, strengthen the air environmental standards, and regulate even more rigidly exhaust gas from automobiles.

President Stresses Linking Environmental Protection, Trade

SK1805005594 Seoul THE KOREA TIMES in English 18 May 94 p 2

[Text] President Kim Yong-sam yesterday called for active preparation for the world trend to link environmental protection with trade.

Kim said, "The structure of industry has to be transformed into one which consumes less energy."

The Chief Executive made the remarks during a report from the Advisory Council for Science and Technology at Chongwadae [presidential offices].

After the report, the President hosted a lunch for the 10 council members and seven related Cabinet ministers on the occasion of the first anniversary of the council inauguration.

President Kim also said that products which do not contaminate the environment much have to constitute the mainstream of exports, calling for added efforts to foster people's awareness of environmental protection and energy conservation.

Pointing out the fierce confrontation between the United States and France during the Uruguay Round negotiations, President Kim accented that a comprehensive plan should be mapped out to sharpen the national competitiveness of the domestic video industry in preparation for the coming multimedia era.

"Our video industry, in fact, has been lagging far behind those of advanced countries chiefly because of a lack of creative ideas and financial shortcomings. This problem should not be left unattended," he said.

He emphasized the fact that the video industry is a more value added one than manufacturing and will become promising in the coming century.

Kim added that national leap into the ranks of advanced nations is possible only when science and technology backs, calling for development of Korean technology.

Prof. Pak U-hui of Seoul National University said that government officials' understanding of science and technology development remains low in terms of budget allocation and law.

He also said that officials are not catching up with the change of times. President Kim said that the officials have to change their way of thinking in the era of the World Trade Organization.

KORECO Campaigns To Preserve Farming Environment

SK1505115694 Seoul THE KOREA HERALD
(Supplement) in English 15 May 94 p 3

[Text] Korea Resources Recovery and Reutilization Corporation (KORECO) was founded Sept. 11, 1980 to promote the reutilization of wastes and the preservation of natural environment, thus opening the first chapter in Korea's waste recycling program.

Since its inception, KORECO has continuously endeavored to overcome a common concern of mankind, resource problems, and to preserve a cleaner natural environment, and has spared no efforts in developing and disseminating waste reutilization technology.

In particular, the 1991 revision to the law on waste management allowed KORECO to take a central role in the country's efforts toward waste reutilization.

Fortunately, public concern over environmental preservation and waste reutilization has been on the rise for the past few years, and the KORECO has taken on a greater responsibility than ever before.

Role and Function

United in harmony and cooperation and in the spirit of excellence, KORECO has been commissioned to contribute to the development of national economy through waste reutilization and technological development.

Since its founding Sept. 11, 1980, KORECO has systematically collected and treated the main pollutants of the agricultural environment such as used vinyl and used agricultural chemical bottles, thus gradually becoming a leader in preserving the agricultural environment.

As the size of the national economy expands and the level of the industrial structure advances, however, there has been a dramatic increase in the volume of wastes. Moreover, an increase in the proportion of special wastes which have either a higher chance of second-phase pollution or other particular characteristics has not only

called for the safe treatment and reduction of waste volume, but has reminded us of the importance of waste reutilization.

All of these have not only put an emphasis on the role of KORECO in collecting reusable goods, but have precipitated KORECO's assumption of a central role in a variety of waste reutilization programs such as operation of the waste management fund, creation of the Center for Waste Flow Information, research and development (R&D) on all aspects of waste reutilization, and operation of reutilization plants.

Treatment of Used Vinyl

The development of synthetic resins has dramatically changed human life. The extensive use of synthetic resins, however, has naturally increased the volume of used synthetic resins, whose treatment becomes an urgent task.

In particular, the development of farming technology has contributed to an increase in the use of vinyl in the countryside, such as in preparation of rice seedbeds or for cash crop cultivation. The resultant pollution of the agricultural environment is also one of the corporation's major concerns.

Used vinyl, when burned, generates toxic gas; when buried in the farmland, affects the growth of plants by interdicting the flow of water. If used vinyl is not properly treated, it creates an array of problems of reclamation, resources and environmental pollution.

In order to render the agricultural environment more affluent and cleaner, KORECO has maintained a coherent used vinyl management system from collection to reutilization, and has regularly visited villages in the countryside.

Used High-Density Vinyl Reutilization Plant

For the first time in Korea and as a culmination of reutilization efforts, used vinyl reutilization plants have been set up in Chongju and Andong, with a combined annual capacity of over 10,000 tons. The vinyl is processed into an intermediate resource, pellets, which are supplied to private companies.

In the past, KORECO paid for the collection of used high-density vinyl in rural areas. Those collected vinyl, however, could not be reutilized and was stored in the KORECO's branch offices nationwide, due largely to its lack of economic value and the low level of technology of private reutilization companies.

Recognizing that the reutilization of used vinyl would be a vital task in maximizing the use of available resources and preserving the environment, KORECO conducted R&D on the reutilization technology of advanced countries and set up Korea's first reutilization plant in Chongju, North Chungchong Province.

Collection and Treatment of Used Bottles

Agricultural chemicals are often called "economic poison" in that depending upon whether they are used safely or not, they can do good or harm. In order for agricultural chemicals, an indispensable element in farming, to be most useful, attention must be paid to their usage. Equally important, however, is what to do about them after their use.

Shards of used bottles would not only do harm to the people or cattle, but are one of the main culprits contaminating the agricultural environment and destroying the ecosystem.

In parallel with its efforts to collect used vinyl, KORECO collected and recycled between 1987 and 1992 a total of about 253 million bottles with a cash value of 3.2 billion won, and has contributed to the preservation of a cleaner agricultural environment.

Separate Garbage Collection and Treatment of Reusable Resources

A variety of trends associated with rapid economic growth, including a more consumptive pattern, increasing use of disposables, and shorter lifespan of durable goods, have all contributed to an ever-rising amount of household wastes.

It should be remembered, however, that the earth has limits in its self-purification capacity, and so do the resources. It is these considerations under which the nationwide separate garbage disposal and collection system has been implemented so that the public can dispose and separate the reusable resources, other waste, and coal ash according to their respective end-forms. Separately disposed garbage can be more effectively collected and reused and can contribute to the saving of resources and the creation of a far better and more comfortable environment.

Environment Ministry Responsible for Clean Tap Water

SK1505070894 Seoul THE KOREA HERALD
(Supplement) in English 15 May 94 p 1

[Article by staff reporter Yi Song-yol]

[Text] No other government agency has recently gained more weight than the Ministry of Environment as Koreans are becoming more and more environment-conscious with the aggravating water and air pollution.

In a bid to enhance the ministry's authority to control tap water for example the ministry recently absorbed three sections from the Ministry of Health and Social Affairs and the Construction Ministry.

Now the Ministry of Environment is responsible for the maintenance of clean water from reservoirs to the tap of each household.

The measure has been taken as the government has come to see more than ever before the importance of supplying clean water after the nationwide shock over contamination of the Nakdong River and several other important sources of drinking water.

But as purifying water for potable use is a very expensive business, the ministry has decided to transfer it to the private sector and industrial companies will gradually be directly responsible for treating their own waste.

It means that the government will allow state-run corporations or private companies to participate in the operation of water purification plants, ministry official say.

Sophisticated equipment will be installed at filtration plants at the lower streams of the Nakdong and three other rivers to supply safer tap water, according to a ministry project.

As Environment Minister Pak Yun-hun has put it, the measure to allow state-run corporations and private firms to participate in running water purification plants is intended to permit more experts to manage water quality.

Presently, water filtration plants are under the control of the government. Most of the state-run water purification facilities are manned by about 15 government employees, of whom only two to three have the qualifications to be classified as professional technicians.

"It is of utmost importance that qualified manpower be assigned to deal with water treatment processes and the only way that this can be financed is by transferring the business to the private sector," Minister Pak says.

He hints, however, that this will likely increase the charges for tap water and that there's no other way to deal with the situation since the government is suffering from a huge deficit by carrying out the purification on its own.

The delegation of the business to private sector will only be effectuated on condition that the management structure is completely overhauled so that no additional monitoring will be required to ensure the highest rate of potability.

At the same time, the ministry is to map out plans to introduce environmental taxes, issue bonds and instant lottery tickets as a means of raising funds necessary to finance various environmental improvement projects.

On the issue of waste treatment, industrial facilities across the nation will be told to equip themselves to deal with their own waste instead of relying on government-run treatment plants.

At the same time, both individuals and enterprises failing to conform to regulation on the dissipation of garbage in public places will be subject to heavy fines on the spot, the ministry has decided.

But the ministry is to relax various regulations on the installation of related facilities, including incinerators,

so that the industrial companies can cope with their waste and reduce pollution at the point of its generation.

On the private side, greater efforts will be made to encourage residents to actively participate in the separate waste disposal system for maximizing the rate of recycling.

The initiation of garbage collection and treatment charges in accordance with the amount generated, which started in April, plays a powerful role in enhancing the awareness of the public in the role that they must play in protecting the environment, ministry officials note.

Minister Pak has said his ministry will help government officials and civic groups to jointly monitor the quality of water. The ministry also plans to support campaigns sponsored by the environmental groups to protect clean water.

"Also of substantial importance will be the launching of joint surveillance groups among the government and civic organization to maintain close watch on the quality of water," Pak says.

He says his ministry plans to invest about 30 billion won this year to develop environmental technology, and will also work out steps for the Green Round of multilateral talks, which is expected to impose tougher environmental regulations on Korean businesses.

He says the government seeks to sign agreements with advanced countries such as the United States, Japan and France to launch joint research into environmental technology.

A ministry task force has visited the United States and other advanced countries in February to study recent trends in environmental protection in those countries.

The ministry will also provide training programs on environmental technology to officials from Asian countries like China and Thailand.

Role of Environmental Management Corporation Outlined

SK1505070594 Seoul THE KOREA HERALD
(Supplement) in English 15 May 94 p 2

[Text] Since 1987, the experts of Environmental Management Corporation (EMC) have used the latest technologies to administer and operate various treatment plants including plants for industrial wastewater, hazardous wastes, urban waste incineration, and metropolitan landfill sites.

EMC has designed and supervised the construction and operation of water treatment plants at various locations throughout the country, and has provided technical assistance and loan programs to small and medium enterprises for the building of their environmental facilities.

Lately, the corporation has started constructing various kinds of facilities on behalf of the government and local

agencies, and has raised funds for research and development of environmental technologies.

EMC will continue to serve the public and private sectors with much better and more efficient antipollution programs. The corporation is also going to expand its capacities and services as an institution of professional skills and commitment.

In a bid to preserve the environment through the operation of modern facilities and high technologies, EMC has operated and constructed facilities entrusted by the government, local agencies or private sectors: wastewater treatment plants, landfill sites, hazardous waste treatment plants, night soil treatment and urban waste incineration plants, and industrial liquid waste treatment plants.

The corporation has financed the construction of antipollution facilities for small and medium companies. It has provided technical assistance in the design, construction and operation of various environmental facilities, and educated the public on environmental preservation.

History of EMC

May 21, 1983: Legislation forming the Environmental Antipollution Corporation is instated

Dec. 31, 1986: Enforcement Regulations are passed

March 23, 1987: The initial body of the present EMC is formed

Nov. 28, 1987: The corporation is renamed Environmental Management corporation

Oct. 15, 1993: Headquarters of EMC is rearranged for innovative management, with nine departments including the Metropolitan Landfill Site, 11 plants and 14 regional offices

In general, the effluent of the industrial complex is highly contaminated. EMC's plants were constructed to collect all the waste discharged from the industries in the complex and to treat them all together thereby saving the treatment cost, reducing the pollution of nearby river. Seven plants are under operation at each of the corresponding industrial complexes. The above plants are to be enlarged and the new ones constructed to make the rivers clean.

Whasong plant treats 60 tons a day of industrial waste generated in the metropolitan area, thereby contributing to clean air, water, and earth.

The plant is equipped with incinerators which treat polychlorinated biphenyl (PCB) and organic phosphorus, in addition to the physical chemical treatment facilities which treat acid and base wastes and a sanitary landfill site for their solidification, landfill of the waste sludge containing heavy metals.

Onsan plant treats about 100 tons of hazardous waste daily generated in the Youngnam region thus going far

toward the preservation of the regional environment. It is prepared with an incinerator treating waste oil and organic sludge, a physical/chemical treatment facility treating concentrated hazardous liquid waste, a solidification unit, and a landfill site.

The waste carried into the plant is weighed on the weighing bridge, laboratory-tested for analyzing the concentration of the ingredients, and is conveyed to the treatment processes.

Various waste oil, organic sludge, PBC or phosphorous compounds are heat-dissolved in the rotary kiln first, and re-incinerated in the secondary incinerator at the temperature of 1,200 degrees C. The exhaust gas generated during the incineration is treated through the detoxification tower and the electrostatic precipitator.

Waste acid and base are neutralized, processed by coagulation and sent to the sedimentation basin for the settling. Liquid is ion-exchanged finally and the dehydrated sludge cake is sent to the landfill site after solidification.

The sludge bearing heavy metals mixed with cement and chemicals is solidified and cured in a molding box for several days and sent to the landfill site finally.

The landfill site is sealed with a membrane to protect the secondary contamination of the underground water by leachate. The collected leachate in the collection well is treated in the chemical/physical treatment facility.

In particular, the EMC has been pushing ahead with a long-term project related to the operation and maintenance of the sanitary landfill site for metropolitan areas from September 1989 through December 2014.

Landfill works will last for 25 years from February 1992 through December 2015. The reclaimed coastal zone is located at Komdan-myon County, Yangchon-myon County and Incheon City.

The landfill site will be covering a total area of 6.3 million pyongs or about 22 million sq. meters. Its landfill capacity will amount to 278 million tons. With the main facilities of two disposal plants (3,500 tons a day each), the landfill site will cover 20 cities or countries in Kyonggi Province.

The bid project will bring in expected effects: an actual solution for the wastes generated in the metropolitan area, protection of the environment by sanitary landfill and development of advanced waste treatment system.

Another reclamation project is under way, though its construction period ended as of November 1991. Landfill period will last through December 1992.

With a total landfill capacity of 47 million tons, the huge project worth 87 billion won specifies the 11,312-meter road construction, 10,690-meter embankment, three bridges, a leachate treatment plant, leachate collection facility, waste ingredients test stand, office building,

weighing facilities, car washes, a maintenance camp for the landfill equipment and landscaping.

On behalf of the small industrial complexes in the rural area, EMC is engaged in the design, construction supervision and operation of waste treatment plants.

In a move to minimize the contamination by those small complexes established for the balanced development between cities and the country and the increase of new income sources for farmers and fishers, the EMC has designed, supervised the construction of, or operated small plants for the treatment of waste water from the complexes.

PAPUA NEW GUINEA

Swiss Firm Hired To Stop Rain Forest 'Devastation'

BK1705083094 Hong Kong AFP in English 0758 GMT 17 May 94

[Text] Port Moresby, May 17 (AFP)—A Swiss firm, SGS, has been hired by the Papua New Guinea (PNG) Government to monitor timber exports out of the country in the face of what are seen as unscrupulous deals by Asian timber companies, officials said Tuesday.

It comes as pressure mounts for effective action against foreign companies, many said to be part of a huge Malaysian operation accused of plundering Papua New Guinea's rain forests for huge profits.

The 5.5-million-dollar contract is aimed at tightening scrutiny and inspection of logging and timber exports to maximise government revenue from log sales.

SGS will also guard against transfer-pricing and illegal sale of logs in a deal which Forestry Minister Tim Neville said would pull unscrupulous companies into line.

Neville said in an Australian Broadcasting Corporation (ABC) television program Monday that he had been offered bribes of up to 20 million dollars and threats were made on his life because of his strong drive for reform of the timber industry.

He told the ABC the threats and offers of bribes were serious and those responsible faced criminal charges, but did not name the companies responsible.

Following a visit to logging areas of the country with Neville, the program highlighted what it termed as the "wholesale devastation" of PNG's forests.

SGS, based in Geneva, has been engaged in the business of trade surveillance since 1878.

"We will be present at all loading ports to check the volume of timber loaded and do species identification," SGS general manager Len Cordiner said Tuesday.

"We will also be checking all the contract documents and setting up a computerised data base for keeping records on all of the concessions and timber going out from these concessions."

Cordiner said the principal objective was to obtain precise figures and facts on how much timber was being exported from Papua New Guinea so that the government had more effective control over the forest industry.

"At the moment there is a belief that a lot of logs are going out of the country without being declared," he said.

"There's also a belief that the revenue the government is collecting is well below what it should be.

"So the objective is to control the industry and to make sure that the loggers are doing the right thing; that the correct value is being declared; and that the government is getting the correct income.

PHILIPPINES

Ramos Approves Nation's First Biodiversity Program

BK1605041794 Manila BUSINESS WORLD in English
12 May 94 p 15

[Text] The National Economic and Development Authority (NEDA) revealed today that the safeguarding of the environment is now ensured with the approval by President Ramos of the Philippine Program for Biodiversity Management.

This program will prevent the depletion of the country's natural resources in the pursuit of industrialization as envisioned under Philippines 2000.

The approval of the program was made during the recent meeting of the Philippine Council for Sustainable Development (PCSD) with the president.

Officially called the Philippine Strategy for Biological Diversity Conservation (PSBDC), the program contains 18 broad objectives intended to address issues such as biodiversity policy, sustainable use, sustainable agriculture, recognition of ancestral domain, public education and awareness on biodiversity, and institutional capability-building.

The specific goals of the PSBDC include: developing and implementing a holistic and comprehensive national program for the conservation of biological diversity and the sustainable use of its components; ensuring that the relevant activities of the biodiversity program harmonize with those of other government and nongovernmental organizations (NGO's), private sector, religious groups, and local community; and institutionalizing the practice of biodiversity conservation through legislative, administrative, fiscal and other regulatory measures.

An important issue the program addresses is the need for a review of existing national and local policies on the management, use, and conservation of natural resources areas, wildlife and other biological resources.

The program thus aims to reform those policies that encourage the misuse of natural resources and ecologically unsound management of biodiversity and its components.

It also proposes that policies which give incentives to industries that practice sustainable development and environmentally sound activities be adopted. These would include reduction of resource consumption through waste minimization, recycling, and conservation.

Another objective of the PSBDC is the implementation of natural resources accounting method that promotes biodiversity conservation. Part of this objective is the development of satellite environmental accounts in the Philippine system of national accounts.

This could lead to the appropriate pricing of resource ecosystems. Today, resource ecosystems are being treated as "free" good and their degradation does not count as depreciation of the nation's basic capital stock in the calculation of Gross National Product (GNP).

Another critical objective of the program is the integration of biodiversity conservation into national and local development planning.

"If government agencies, both national and local, are willing to incorporate biological diversity conservation in the planning and management of the country, positive changes in the ecological, economic and social spheres of development will surely come about," the program states.

TAIWAN

Taipei To Attend CITES Meeting With Beijing's Permission

OW1205190894 Taipei CNA in English 1326 GMT
12 May 94

[By Debbie Kuo]

[Text] Taipei, May 12 (CNA)—Taiwan will attend the Convention on International Trade in Endangered Species (CITES) animals committee meeting scheduled for May 16-18 in Beijing, a spokesman for the local green consumers foundation said Thursday [12 May].

Foundation Chairman Fang Chien said the Council of Agriculture [COA] agreed to attend the meeting after being notified by committee Chairman Hank Jenkins, through Fang, that he had reached an agreement with mainland Chinese authorities to allow Taipei's participation.

Beijing had previously said it would not allow Taiwan's participation at the meeting, ostensibly because it is not a CITES member.

Jenkins, a conservation official in the Australian Government, said it is important for Taiwan to be present at the meeting because issues pertaining to wildlife protection and conservation in Taiwan are on the agenda.

Both government agencies and private conservation groups in Taiwan are hoping to attend the meeting since it will detail the future direction of international wildlife management programs, Fang said.

He said it would have been "unjustifiable" for Taiwan to be barred from the meeting, considering CITES has threatened it with trade sanctions for its failure to sufficiently stem the trade in rhino horn and tiger parts.

The COA will be represented by Prof. Li Ling-ling from National Taiwan University and Prof. Wang Ing from National Normal University at the Beijing meeting. Fang said he would also be a member of the Taiwan delegation, along with Ted Ting, chairman of the Beautiful Taiwan Foundation, another local conservation group.

The biennial meeting is a warm-up for the 1994 CITES parties meeting, which is scheduled to open in Florida this November.

Taipei Joins CITES Working Panel

OW1905093794 Taipei CNA in English 0752 GMT 19 May 94

[Report by Danielle Yang]

[Text] Taipei, May 19 (CNA)—Taiwan has joined a working panel of the Convention on International Trade in Endangered Species (CITES), local conservationist Ted Ding said Thursday [19 May].

Ding, who is currently in Beijing, told CNA that Taiwan's three civilian representatives had joined the working group, which is subordinate to the CITES animals committee.

The three civilian representatives include professor Wang Ing of the National Taiwan Normal University biology department, Jay Fang of the Green Consumer Foundation, and Ted Ding of the Beautiful Taiwan Foundation. The three were in Beijing for the May 16-18 CITES Animals Committee meeting.

Ding said Taiwan hopes to establish a long-term relationship with CITES through attendance at such meetings.

Nearly 60 representatives from more than 20 countries participated the CITES animals committee meeting in Beijing. Resolutions adopted at the meeting will be discussed at the 1994 CITES meeting in Florida this November.

Corn, Soybean Importers Threaten To Stop Buying From U.S.

OW1705095994 Taipei Voice of Free China in English 0200 GMT 15 May 94

[From the "News" program]

[Text] Taiwan's importers of corn and soybeans, retaliating against the U.S. ban on import of wildlife products, threatened Friday [13 May] to take their business worth about \$1 billion a year away from the United States. The Taiwan Feed Industry Association and the Taiwan Vegetable Oil Manufacturers Association lodged protests with Washington's unofficial embassy in Taipei over the U.S. ban on wildlife product imports from Taiwan.

President Bill Clinton announced the ban, worth up to \$25 million a year, last month in response to the island's continued trade in products made from endangered tigers and rhinos.

A spokesman for the Taiwan Feed Industry Association said if there is no goodwill response from the United States, his association will give priority to South Africa, Thailand, Central American countries, and Australia when buying corn and soybeans. The two associations of Taiwan's many importers of corn and soybeans buy 5 million and 2 million tons a year. ROC [Republic of China] officials have denounced the U.S. move as unjust after Mainland China eluded sanctions.

THAILAND

Council Initiates Environment Protection Projects

BK1105084094 Bangkok BANGKOK POST in English 11 May 94 p 16

[Excerpt] The Thailand Business Council for Sustainable Development, comprising 50 leading company members, has initiated five projects aimed at protecting and saving the country's environment.

The council was established six months ago to address environmental issues and is chaired by former Prime Minister Anan Panyarachun.

The five projects are: pesticide-free agricultural villages, renovation of Khlong Lot, study of lignite and its impact on the environment, environmental conservation circle (ECC), and green labelling.

The council's objectives are: to provide reliable information and guidance to distinguish genuine environment-friendly products; to encourage the production of green products using clean technologies; to promote energy conservation and recycling; to promote the establishment of a third-party labeller who can offer an unbiased opinion to back up marketing claims, to establish more demanding standards for companies to make environmentally sound products; and to promote environmental awareness among manufacturers and consumers.

Chaiyot Bunyakitdi, director of the Thailand Environment Institute's business and environment programme, said the green labelling project will be significant in helping identify projects that have proven to be less destructive to the environment. To date, 19 member firms have agreed to participate in the labelling project.

Environment-friendly products have achieved international popularity among environment-conscious consumers.

Mr. Chaiyot said the council will vigorously promote this project and hopes to establish guidelines to assist firms

in their marketing claims, often not entirely accurate, of products less damaging to the environment.

The Thailand Business Council for Sustainable Development (TBCSD) has proposed establishing a committee, to be chaired by Permanent Secretary for Industry Siwawong Changkhasiri, on green labelling guidelines and comprising representatives from the Federation of Thai Industries, Board of Trade, Thai Industrial Standards Institute, Office of Consumer Protection, Environmental Engineering Association of Thailand, Press Association, Public Relations Confederation of Thailand, Marketing Association of Thailand and no more than 25 representatives from TBCSD. [passage omitted]

BOSNIA-HERCEGOVINA

Tuzla Muslims Said Ready To Cause Ecologic Catastrophe

LD1205114494 Belgrade TANJUG in English
1128 GMT 12 May 94

["Pool" item]

[Text] Belgrade, May 12 (TANJUG)—If their offensive on the Serb town of Brcko fails, the Bosnian Muslims are planning to cause an ecologic catastrophe by blowing up the chemical facilities in Tuzla (northern Bosnia), Belgrade POLITIKA said on Thursday.

The Tuzla chemical works are similar to that in the Indian town of Bopal which caused the death of 2,500 people and seriously injured 150,000.

Tuzla is held by the Muslims who have over the past few days been massing major forces in the south and southwest of this city, also confirmed by the U.N. Protection Force (UNPROFOR) spokesman in Sarajevo on Wednesday.

The Seventh Brigade of the Bosnian army, well-known for its fundamentalism and lightning-speed offensives, has been transferred to the Kladanj-Olovo region (south of Tuzla) in preparation of military actions in this region, REUTER said.

The threat of an 'ecologic strike' from Tuzla could be a desperate measure since poisons cannot tell the difference between one's own army and civilians and those of the enemy, the Belgrade paper said.

Another possibility is that NATO would fulfill Muslim expectations and help them if they are unsuccessful, as in the case of Gorazde.

The Muslims could blow up several tanks containing poison substances and, in keeping with the already proven scenario and with the support of the Western media, blame the Serbs and then ask for NATO's help, POLITIKA said.

The threats by the Tuzla Muslims would cause the death of thousands of people and seriously hurt over hundreds of thousands.

Before the outbreak of the civil war in Bosnia, Tuzla was a major center of the chemical industry which had stores amounting to about 1,300 tonnes of chlorine, 1,100 tonnes of ammonium, 60 tonnes of sulfuric acid and 3 tonnes of phosgene.

The release of chlorine into the atmosphere would threaten life in an area ranging from 1.5 km - 76 km, while the ammonium would affect an area from 1 km - 28 km depending on the weather, POLITIKA learned from Dusan Rajic, a contamination expert of the Yugoslav army's technical institute in Belgrade.

The use of phosgene would affect only the centre of the city or the site from where it was released. Those who are threatening to cause an ecologic catastrophe could use this element since, by sacrificing their own people, they would achieve their aims—to force international military aid, Rajic said.

The Muslims have already applied this scenario of sacrificing their own people to turn the international public against the Serbs. Last year they caused the massacre in the Vase Miskina Street in Sarajevo, while this year they caused the death of innocent civilians at Sarajevo's Markale Market in the same way.

Both times the aim was achieved—the international community reacted with lightning speed and blamed the Serbs. Subsequent reports by UNPROFOR representatives about who was really to blame, had no effect.

BULGARIA

'Alarming' State of Environment Reported

AU1205161994 Sofia BTA in English 1507 GMT
12 May 94

[Text] Sofia, May 12 (BTA)—The radiation impact of the nuclear power plant at Kozloduy (on the Danube) is weaker than the natural background radiation, a joint news conference of representatives of the power engineering industry and the Ministry of the Environment was told today.

The state of environment in Bulgaria is alarming. Last year nearly 900,000 tonnes of sulfur dioxide were thrown up in the air. The major source of sulfur dioxide pollution is the Bulgarian brown coal, especially the coal mined in the Maritsa-Iztok area. However, the power stations using brown coal as fuel account for 31.62 percent of the electricity output in this country, the news conference was told.

According to power producers, bringing power engineering into line with the Bulgarian environment legislation will cost a lot of money—every Bulgaria will have to pay 1,500 leva a year until 2010.

According to experts of the Ministry of the Environment, the power engineering industry is hardly the sole air polluter. Exhaust emissions pollute the air in the big cities with carbon dioxide. Measurements show that exhaust emissions account for 70 percent of the air pollution in Sofia.

POLAND

Environmental Damage on Ex-Soviet Bases Assessed

94P20738Z Warsaw ZYCIE WARSZAWY in Polish
28 Apr 94 p 13

[Article by Piotr Zajdel: "The Ecological Zero Option"]

[Excerpts] The Army of the Russian Federation left Poland with a great deal of ecological damage and "souvenirs." The most dangerous of these are the pollution of the soil and the water table by chemical waste and petroleum lines. The estimated cost of the damage is approximately 52 billion zlotys [Z].

Already in the 1980's, the Polish Ecological Services tried sporadically to control pollution from some of the Soviet military bases. Most of these efforts failed because "outsiders" were not permitted to enter Soviet bases. Not until May 1992 did the situation change, after the signing of a Polish-Soviet agreement on the removal of Soviet forces from Poland. Joint inspections of both Polish and Russian bases began. The result of all of this was ecological standards that were incorporated into the agreements for transferring the former Soviet military bases to the Poles. "We have documented the magnitude of all the damage caused, and we have calculated the costs," stated Andrzej Walewski, the Main Inspector for Environmental Protection.

"The Russians left without paying for the ecological damage they committed, so, in turn, we are not going to pay them for any of the equipment they left behind," stated Walewski. According to him, Poland won the battle with a political success, while the Czechs and Hungarians incurred many costs during the Soviet pullout. "The fact that our country had documentation on the ecological damage played a great psychological role," stated Walewski.

Of 59 sites that were occupied by the Soviets, 35 had the potential to be ecological hazards. The National Inspector for Environmental Protection chose 21 sites believed to be the most contaminated. The inspections included all of the air bases, large fuel depots, ammunition dumps, and firing ranges.

Tests were conducted on underground water to see if there was chemical contamination. "Water was inspected both above and below ground. Also, the damage done in forests and on roads and contamination from chemical and nuclear weapons were examined," stated Walewski. These tests were conducted on the grounds of the bases and around them. Hydrological tests are being conducted on a wide scale by using bore-hole methods. Physiochemical tests of the water and water table are being done in specialized laboratories. The tests are conducted at government expense, and, to complete them, it is estimated that the cost will be approximately Z14 million.

The tests are being funded by Polish zlotys exclusively and under the direction of the Ministry of Environmental Protection. The Military Technical Academy will also participate in the tests in tandem with other research groups.

The damage may be assessed at Z52.2 billion. "This is a rather abstract sum, a sum we would have to pay in order

to fully recultivate the land," stated Walewski. [passage omitted] The majority of the funds will come from the national budget. The Environmental Protection group has developed a special ranking in terms of money and in terms of which area will be "cleaned" first. The cleaning will take place first in the most contaminated areas. These areas are: Kluczewo, in the Szczecin voivodship; Brzeg, in the Opole voivodship; and Swinoujscie and Borne Sulinowo in the Koszalin voivodship. Let us not forget that the Soviet forces were stationed on Polish soil from World War II until 17 September 1993, over an area of 70,000 hectares and 59 bases. Their stay was legitimized by an agreement between the People's Republic of Poland and the Soviet Union.

ROMANIA

Iliescu, Nastase Address European Water Management Symposium

AU1205162194 Bucharest ROMPRES in English
1418 GMT 12 May 94

[Text] Bucharest ROMPRES, 12/5/1994—Starting today under the aegis of the Parliamentary Assembly of the Council of Europe is the International Seminar on the Protection and Management of Fresh Water Sources in Eastern and Central Europe.

The opening session, presided by Francesco Parisi, chairman of the Committee for Environment, Regional Planning and Local Authorities of the Council of Europe, approached the general issues of the role the Danube basin can play in Europe, the global management of water in environmental policies. Held under the sign of European integration, the proceedings of the seminar, Mr. Parisi said, "are part of the building of a great edifice, because the nation we all belong to is the European nation."

In the address made on the occasion, Romanian President Ion Iliescu gave a brief description of Romania's experience in water management, of this country's water resources and its hydrographic map, of the need to use water economically, of the management and protection of water resources.

Adrian Nastase, speaker of the Chamber of Deputies, welcomed the participants in the Bucharest seminar on behalf of the Romanian Parliament, reasserting Romania's wish to align to European standards as the major objective of the Romanian foreign policy.

The opening speeches were followed by debates on the first theme: the actions taken by the Council of Europe in the direction of fresh water resources management and protection, with a report by Victor Ruffy, vice-president of the Committee for Environment, Regional Planning and Local Authorities of the Council's Parliamentary Assembly.

ARGENTINA

British Company Plans To 'Plunder' Quebracho Wood

PY1605220694 Buenos Aires *BUENOS AIRES HERALD* in English 15 May 94 p 4

[Text] (DYN)—A British company—under the guise of carrying out important ecological work—is planning to plunder some 50,000 hectares of quebracho woods in the province of Santiago del Estero without the permission of the Argentine state, according to a report from a local environmental group.

A complaint was lodged yesterday [14 May] by the Cordoba FUNAM ecological group (Foundation for the Protection of the Environment) in conjunction with a fellow British group which said the woods, in the region of Moreno in the northeast of Santiago del Estero, would be in grave danger if no action was taken by the government to shelve the plans.

The British company, currently assessing the cost of the project, hopes to market the quebracho with the brand-name "AAA Hardwood." The work would be carried out in conjunction with the local Australian Argentine Agricultural (AAA) group.

"The project will be promoted by an ecological lobby as if it had come from a forest which had been exploited rationally," FUNAM President Raul Montenegro said. "In other words they will try to fabricate a green image."

The British company's plans, leaked to FUNAM last month, estimate that once work gets under way in Santiago del Estero the company will be in a position to produce some 3.6 million metres of parquet, 13,901 tons of charcoal and 30,000 tons of other fuel.

A probe into the affair has also discovered that a leading bank in the Federal Capital has offered to put up capital in order to fund the project.

Santiago del Estero forestry commission representatives have said they will fight the plans although they have not yet received precise details of the British company's intentions.

Meanwhile the national government has made no comments on the case.

The forests under threat are considered the most important of their type in Argentina.

BRAZIL

Article Views Threats to Ecological Reserves

PY1205143694 Rio de Janeiro *JORNAL DO BRASIL* in Portuguese 11 May 94 p 8

[Article by Ronaldo Brasiliense]

[Excerpts] The Environment and Legal Amazon Region Ministry is threatening to dismantle six national parks, three biological reserves, seven national forests, two environmentally protected areas, and four rational exploitation reserves. As these units have not been legally registered within the period contemplated in the laws, their status will become void. This is an unprecedented retrograde step in the Brazilian environmental policy. Two of the threatened units are in Rio de Janeiro: the Tingua biological reserve, which was created on 23 May 1989; and the Mario Xavier national forest, which was created in October 1989.

In accordance with Article 10 of Decree 3365 dated 21 June 1941, the legal registration of these units, which were created by the federal government, "must be made effective through agreements or obtained judicially within five years of the date on which the decree is published. At the end of this period, the terms of the decree become void." When this happens the unit can only be the object of a new decree after one year.

The Brazilian Institute for the Environment and Renewable Natural Resources (Ibama)—which is responsible for the administration, preservation, and maintenance of the preservation units—allegedly has no funds to finance the legal registration of these units that were created at the end of Jose Sarney's administration and the beginning of Fernando Collor administration. Several areas were created as an ecological marketing strategy a few days before the UN Conference on Environment and Development (Rio-92) in an attempt to show the world that Brazil—which had been harshly criticized internationally for deforestation and clearing land by fire in the Amazon Region—was concerned about environmental preservation.

Research by Ibama experts before Rio-92 showed that the government would have to invest \$1.2 billion to legally register the land on which Brazilian national parks, biological reserves, ecological stations, national forests, environmentally protected areas, and rational exploitation reserves are situated.

The first warning of the threat that has been affecting these units was made by Atanagildo Matos, aka Gatao, who is the president of the National Council of Rubber Tappers. Gatao is the successor to ecologist Chico Mendes. He reported that five rational exploitation reserves created during the Collor administration are threatened with being dismantled because of Ibama's negligence in legally registering the expropriated areas.

On 10 May, Atanagildo Matos and Federal Deputy Sidney de Miguel (Green Party-Rio de Janeiro) met Environment Minister Henrique Cavalcanti and called for urgent measures to prevent Brazil from losing these units which are important for the preservation of the national flora and fauna. Their loss would be a tremendous blow for the Brazilian environmental policy. [passage omitted]

The National Center for Sustained Development of Traditional Peoples succeeded in legally registering 2.1 million hectares of the Alto Jurua and Chico Mendes rational exploitation reserves in Acre State; the Cajari River reserve in Amapa State; and the Ouro Preto reserve in Rondonia State. The Chico Mendes rational exploitation reserve in Xapuri and Brasileia counties, with 970,000 hectares, shelters 7,500 people and was demarcated with the assistance of the Army Cartographic Service. The land of the Cajari River reserve, with 481,000 hectares and 5,000 inhabitants, still has not been totally registered because the Jari Project is questioning its legality in the courts.

The nine rational exploitation reserves created by the Brazilian Government cover an overall area of 2.2 million hectares and have 28,460 inhabitants who live basically on rubber gathering, Brazil-nut harvest, and babassu exploitation.

CHILE

Foreign Minister Favors Whale Sanctuary in Antarctica

PY1805141994 Madrid EFE in Spanish 2306 GMT
17 May 94

[Text] Santiago, 17 May (EFE)—Chilean Foreign Minister Carlos Figueroa noted today that Chile agrees with the establishment of a sanctuary for the protection of whales in the southern hemisphere, but located south of latitude 60 degrees, at the so-called Antarctic convergence.

Minister Figueroa explained that the Chilean stance is slightly different from the French position, which establishes a whale sanctuary from 40 degrees latitude south to Antarctica, including Chilean waters from the city of Valdivia, 835 km south of Santiago, to Cape Horn, at 56 degrees latitude south.

The foreign minister emphasized that Chile wants to explain at the next International Whale Commission (IWC) meeting, scheduled in Puerto Vallarta (Mexico) from 23 to 27 May, a "consistent" position with respect to the four sea treaties or conventions that it has signed.

Chile has signed conventions on the sea, on the sea bed, and on high seas fishing, as well as a treaty on territorial seas.

The foreign minister noted that Chile has banned whale hunting within its 200-mile territorial waters. He therefore indicated that our country "has already initiated unilateral protection of this resource."

The foreign minister confirmed that Chile is willing to sign a broad multilateral agreement to protect whale species. He noted that there are fairly advanced studies on the situation of the ecosystem at the abovementioned Antarctic convergence.

Representatives of the "Greenpeace" ecological organization in Chile delivered on 11 May to the president of the Republic, Eduardo Frei, a petition with more than 300,000 signatures supporting the establishment of a sanctuary for the last whale populations in the South Pacific.

According to data supplied by this ecological organization, more than 1 million whales have been hunted down over the past 80 years, and the "blue whale," the largest whale species on our planet at 32 meters long and 100 metric tons in weight, has been particularly affected.

PERU

Establishment of National Environment Authority Announced

PY1105175094 Lima LA REPUBLICA in Spanish
3 May 94 p 8

[Excerpt] Democratic Constituent Congress [CCD] President Jaime Yoshiyama yesterday announced the establishment of the National Environment Authority [Autoridad Ambiental Nacional] which will guide and coordinate environment policies.

Yoshiyama also asked developed countries to swap part of the foreign debt for environment protection and measures against poverty.

Yoshiyama said: "A direct relationship exists between poverty, environmental damage, and sustainable development which must be considered in any international relations that are based on solidarity and shared responsibility."

Yoshiyama also asked developed countries to pardon part of the poor countries' foreign debt so as to restore economic well-being and assist development compatible with sustainability.

Yoshiyama made these remarks during a "Sustainable Development and Economic Growth in Ibero-America" entrepreneurial meeting. This meeting was part of the 22d AICO [Ibero-American Association of Chambers of Commerce] executive board meeting between 2 and 4 May.

Yoshiyama, who delivered the main lecture, admitted that human rights, the removal of poverty, tariff agreements, the protection of intellectual property, and the protection of the environment are among the most important and universally relevant issues.

The ruling party congressman emphasized the significance of a common strategy among the regional countries to cope with the problem of universal environment protection.

Yoshiyama also asked for a change in attitudes and practices, specially by developed countries, and the transfer of the technology needed by developing countries to protect their environments.

He said he wants costs and benefits of sustainable development to be equally shared at the international level.

Yoshiyama wants large-scale education policies to make people aware of the importance of the environmental issue.

He announced that a National Environment Authority would be established within the next few weeks. This National Environment Authority will guide and coordinate environmental policies. Marc Dourojeanni—the Inter-American Development Bank environment division chief—hailed this announcement and offered a donation of \$2 million toward this National Environment Authority.

Yoshiyama explained that the new Constitution includes, among the human rights, the right to a balanced environment that favors the development of life. He added that the CCD is working on this.

To the surprise and approval of the large number of participants at the AICO meeting, Yoshiyama said: "I want to announce that within the next few weeks the Peruvian Congress will vote on a bill on the establishment of a National Environment Authority."

Yoshiyama emphasized: "In response to the concern of public and private organizations, the National Environment Authority will guide and coordinate environment policies and control the sustainable use of our natural resources. It will also guide actions in this area." [passage omitted]

ALGERIA

World Environment Fund Donates \$9 Million for Projects

LD1205110794 Algiers Radio Algiers Network in Arabic
1000 GMT 12 May 94

[Text] Algeria has received a donation of over \$9 million from the World Environment Fund. The money will be used to finance projects for the natural reserve of Kala, in El Tarf Province. The documents were signed in Washington yesterday by the Algerian ambassador to the United States and the head of the Arab Maghreb Department at the World Bank.

BANGLADESH

Commentary Urges Timely Solution to Water Sharing Issue

BK1705132294 Dhaka Radio Bangladesh Network
in Bengali 1430 GMT 16 May 94

[Station commentary]

[Text] The historic Farakka Day is being observed today. Eighteen years ago on May 16, 1976 the late leader of the suffering people, Maulana Abdul Hamid Khan Bhasani, brought out a huge procession comprising several hundred thousand people to demand an equitable share of the Ganges River water. People from all walks of life in Bangladesh from Teknaf [southernmost tip of the country] to Tetulia [northernmost tip of the country] joined this long march, which was led by Maulana Bhasani. This long march started at 1000 from Dhaka on May 16. The processionists travelled (2456) miles and made an overnight halt at Chapainawabganj [District]. On the morning of May 17 when this procession marched toward the border at that time the whole path was converted into a huge sea of agitated people. The procession stopped at a spot [name indistinct] about three miles inside the border at 1600. On that day, the people of South Asia and the whole world witnessed through this massive procession the demand raised by the people of Bangladesh for a fair share of the waters of the Ganges River. The world was amazed to see this huge procession by the people of this country to realize their legitimate share of the water of an international river. The world had extended its support to this cause of the people of Bangladesh long before this procession took place.

The adverse effect created in Bangladesh due to the construction of the Farakka Barrage on the Ganges River is now discernible. The situation has further deteriorated. Vast tracts of land in Bangladesh are becoming deserts due to this withdrawal of the Ganges water at Farakka. The part of the Ganges River that flows into Bangladesh is known as the Padma. This Padma was once a mighty river, and the people living along its banks led a very affluent and prosperous life. The part of Bangladesh through which this river flows was once lush,

green, and full of crops. At present, these coastal areas have been turned into deserts. The vast bed of the Padma River has now turned into a desert and has become sandy. Many parts of the Padma River have also become grazing ground for cattle. The river has become totally unnavigable in several areas. The level of underground water in the areas adjoining the Padma River has fallen tremendously due to the shortage of water in the river. This has led to the destruction of agricultural lands and trees. Scarcity of water in the river has also severely affected navigation and shipping transport. This has directly affected the life of about 30 million people living on the banks of the Padma River and has posed a threat to their livelihood.

This situation has created a negative impact on the economy of a least developed country like Bangladesh. Bangladesh wants to be relieved from this unbearable situation and demands its legitimate share of the water of the Ganges, which is an international river. Bangladesh is making efforts at the bilateral level for a peaceful settlement of the water sharing issue. In this regard, several meetings were held in India and Bangladesh at different levels. It is unfortunate that no remedy has been found yet for this problem. [Words indistinct] This Ganges River problem is a life and death problem for about 30 million people in Bangladesh.

Since the present democratic government came to power, it has been holding direct talks with the Indian Government at different levels with a view to resolving this Ganges water sharing problem. So far the talks have not yielded any positive results. On the other hand, the talks have become long and drawn out. During her visit to India, Prime Minister Khaleda Zia held talks with the Indian prime minister, Narasimha Rao, on the issue of resolving this Ganges water problem. India gave its assurance that it would take active measures to resolve this problem. After this, several rounds of talks were held between the officials of the two countries for working out a solution to the problem, but no progress has been made. Bangladesh has raised this issue regarding the sharing of the Ganges River water at the Commonwealth summit, the Nonaligned Movement, and in various international forums. It has also held talks with different countries of the world seeking their active cooperation in securing an equitable share of the Ganges River water. The world has extended its support to the demand raised by Bangladesh for an equitable share of the Ganges River water. Diplomatic efforts have also been made for a peaceful solution of the Ganges River water problem but no progress has been made in this regard.

Today is 16 May. It commemorates the historic Farakka Day. On this day, the people of Bangladesh demand an early solution to the water sharing problem—which is their life and death question. This demand was also raised at the discussion meetings, seminars, symposia, and rallies held today in observance of the day. The Ganges water sharing issue is solely a humanitarian problem. It is not a political problem. It would be inhuman to consider this problem as a political issue. We

hope that in the interest of good neighborly relations, India will take effective measures for an early solution to this problem.

INDIA

Scientist Appeals Against Pesticide Pollution

94WN0270A Bombay THE TIMES OF INDIA in English 30 Mar 94 p 7

[Text] Aligarh, March 29—Despite repeated warnings by global environmental agencies, developing countries, including India, have failed to adequately respond to the challenges posed by the growing threat of pesticide pollution. Almost 50 per cent of food in developing countries is contaminated with pesticides, according to a recent report.

Scientists say that the study of pesticide behaviour is of critical importance particularly for developing countries which also face food shortages. Presently 135 pesticides are registered by the Indian Pesticide Registration Committee. A majority of these pesticides have been found to be unsafe by the United States of America Environmental Agency.

According to a recent report by the World Health Organisation (WHO), every year at least five lakh people suffer from pesticide poisoning all over the world and of these an estimated 5,000 die. Monitoring of pesticide contamination is therefore absolutely necessary, it adds.

At a recent seminar of "soil pollution" in Madras, sponsored by the International Union of Pure and Applied Chemistry, scientists have suggested that Indian farmers should be immediately provided with "Soil Health Cards." The soil health cards will help government agencies in analysing the pesticide content in soils of different regions of the country.

The proposal has been accepted by the Tamil Nadu government. Professor M.S. Swaminathan, an eminent scientist and chairman of the national organising committee of the seminar, appealed to other states to follow suit.

In his paper "Pesticides and Their Impact on Groundwater," Dr R.P. Singh, a soil scientist at the Aligarh Muslim University, has contended that at least three banned pesticides which were considered hazardous in some western countries, do not pose the same danger in some regions in India because of certain characteristics of the soil and different climatic conditions. According to him, if the soil characteristics of a particular area is studied, then the selection of a proper and safe pesticide becomes a distinct possibility.

Dr Singh points out that pesticides such as Carbofuran oxmyal and Phosphamidon do not pollute groundwater when they are used in clay loam and silt loam soils in India, provided the annual rainfall is not high. These

pesticides have a high absorption affinity towards such soils and hence their movements restricted.

According to a United States environmental agency report: "If the partition coefficient value of a pesticide is more than five and the organic matter's partition coefficient value is more than 300, then the pesticide is not harmful."

Similar views have been expressed by Dr N. Sethunathan of the Central Rice Research Institute of Cuttack. He said: "The study of leaching rates of pesticides using soil physico-chemical properties will be of immediate help in controlling pesticide pollution in flooded soils."

IRAQ

Baghdad Mayor Says Embargo Endangers Environment

JN1605142094 Baghdad INA in Arabic 1255 GMT 16 May 94

[Text] Baghdad, 16 May (INA)—Baghdad Mayor Tahir Muhammad Hassun has stated that the assistance offered by specialised health, environment, and human rights organizations and agencies has not improved the environment situation in Baghdad and has not remedied the increasing shortage suffered by the Baghdad municipality services.

At a news conference attended by local, Arab, and foreign correspondents as well as the INA correspondent, the Baghdad mayor said that these organizations have provided the Baghdad municipality departments with only 5 percent of what they direly needed in the various services sectors.

The Baghdad mayor reviewed the direct impact the continued imposition of the unjust embargo has had on Iraq and on Baghdad in particular, especially the suspension of work in many Baghdad city development projects, the piling of garbage in various quarters of the city in view of the shortages experienced by the municipality in the human and mechanical field since the specialized machinery has come down from 800 to 300, with most of these out of order.

He explained that 500 to 700 tonnes of garbage are daily left on the streets. This means more than 20,000 tonnes a month. He said that the shortage experienced by the various municipality services is increasing and that the continued piling of garbage on the streets will lead to the spread of many infectious diseases.

Tahir Muhammad Hassun warned against the impending danger that threatens the individual and the environment in Baghdad as a result of the spread of diseases stemming from pollution, and the overflowing of the sewerage system and how this will cause the death of thousands of citizens.

The news conference was attended by the deputy mayor and the municipality departments' directors.

RUSSIA

'Secret Cities' Still Pose Ecological Threat

94WN0272A Moscow MOSKOVSKIY
KOMSOMOLET in Russian 20 Apr 94 p 4

[Article by Sergey Shmelev: "Kremlev Phantoms"]

[Text] *In the mid-1960's all radio stations often used to air the song "Blue Cities." Do you remember the words? "Sometimes people dream of blue cities with no names..."*

This was some prankster's big joke at our censorship, the most powerful in the world. He hailed cities that never existed on any map. But these phantom cities did have names, and their names were quite poetic: Sarov, Ozersk, Verkh-Neyvinsk, Saraklych, Zolotaya Sablya [Golden Saber]... On secret charts, however, their names sounded more boring: Arzamas-16, Chelyabinsk-65, Zlatoust-26... There also were ZATO's ("Closed Administrative/Territorial Units").

Seven cities were formed by the 17 March 1954 edict in locations which contained establishments of the Ministry of Medium Machine-Building nuclear weaponry complex. Forty years ago. (Besides the three cities mentioned above, there were Krasnoyarsk-26, Sverdlovsk-44, Tomsk-7, Sverdlovsk-45.) Three more were added a little later: Chelyabinsk-70, Krasnoyarsk-46, and Penza-16.

For the entire 40 years the numbered cities existed under conditions of total secrecy. They were absent from post office directories and statistical reference books; they were also excluded every time there was an official census or when voters' lists were compiled.

Every road that led into such a place was blocked by barbed wire strung along its perimeter and had a military checkpoint at the point of entry. Further on, there was the territory of a military unit with another checkpoint at the exit. Only after these two filters could one get to a "Zero city." This "close" atmosphere contributed to a specific "zero" mentality. On the one hand, for instance, these phantom cities had a high level of technical education because the defense used to draw the best graduates from the best schools. On the other hand, there was also a hysterical spy mania and a caste disassociation from the "uninitiated."

On the one hand, there is patriotism deserving nothing but respect and an obsession with work (many "zero" residents do not know what vacations are and have not gone beyond the barbed wire for years). They also have strict morals typical of restricted communities and monasteries. On the other hand, there is a humanities gap borne by being so remote from any source of culture and by the restricted character of these science-towns, closed to artists' tours, congresses, festivals, student Olympics, etc. There are also GULAG traditions inherited from the prisoners who built the cities. All this results in flourishing provincial conservatism. "Zeroites" cannot stand the press media. To this day they are overly careful as

they mumble "site," "item," "experiment," "building N" instead of "reactor," "bomb," explosion, "storage vault..." Meanwhile, their faces acquire an expression as if they need to go to the bathroom on serious business.

Zero cities have their own specific features: the totally geometric layout of their streets, groups of marching soldiers, plenty of sports grounds and arenas.

Another distinctive feature of the science-towns is their ecological unpredictability. Neither the unique underground, 250 meters deep, atomic station of the Krasnoyarsk mining and chemical combine, nor the Chelyabinsk complexes which process the exposed fuel and produce weapons-grade plutonium, nor the cyclotrons of Dubna, Protvin, and Arzamas have undergone independent ecological analysis for decades. But who used to control the radiation environment? It was the services of the same classified complex that created this radiation danger in the first place. In other words, I drink, and then I take myself to the sobering-up station too...

One can imagine the results of all this. Especially considering that even in the open city of Moscow, which is as stuffed with secret sites as a Christmas turkey with apples, radiation ecologists are wandering under solid fences trying to use the wind rose, at least, to figure out the parameters of radioisotopes and other toxic pollutants emitted into the atmosphere. Moreover, radioactive sources and waste are being found in neighboring kindergartens and private apartments. One can imagine what is happening behind those fences.

A new dawn is finally breaking over the phantom cities. The Russian Federation Government issued an edict on 4 January 1994 which officially assigns the following geographic names to them: Zheleznogorsk (Krasnoyarsk-26), Kremlev (Arzamas-16), Zarechnyy (Penza-19), Novouralsk (Sverdlovsk-44), Zelenogorsk (Krasnoyarsk-45), Lesnoy (Sverdlovsk-45), Seversk (Tomsk-7), Ozersk (Chelyabinsk-65), Snezhinsk (Chelyabinsk-70), Trekhgornyy (Zlatoust-26). Some of the information on these cities has been declassified.

We learned that, by 1 January 1993, the population of the big 10 among Zero cities numbered 723,000 people instead of the 123 million claimed by OGONEK a couple of years ago. According to data provided by the Main Administration for Social Policy of the Minatom [Ministry of Atomic Energy], they enjoy the services of 385 kindergartens and nurseries, 149 schools, nine higher education establishments, nine vocational technical schools, 21 movie theaters, four puppet and four music and drama theaters, 10 music schools, 23 libraries, seven museums, 105 gyms, 18 stadiums, 10 swimming pools, 24 young pioneers' camps, etc. Unemployment is still rather low there—only 7,518 were unemployed as of December of last year.

These data, however, do not cover other numbered locations (Shkotovo-22, Krasnoyarsk-39, Zagorsk-7, Severodvinsk, Golitsyno-2). Neither do they disclose the number of reactors, nuclear fuel storage vaults, stored

total energy, radioactive waste dumps, the technology for its conditioning, methods of radiation monitoring, the number of times the Minatom dinosaurs were visited by ecological commissions of international Greenpeace, of the Doctors of the World for the Prevention of Nuclear War committee, of the Toward a New Earth movement, and other nonagency experts.

However, it is not everybody that wants to make the information on Zero cities public. A representative poll of Chelyabinsk-Ozersk residents conducted by the city administration sociological group at the beginning of this year showed that the absolute majority of the people (82 percent) spoke unequivocally against "opening" their city...

Kostromskaya Nuclear Plant Construction Threat to Volga Region

94WN0273A Moscow *SEGODNYA* in Russian
28 Apr 94 p 9

[Article by Vladimir Neskoromnyy, Greenpeace of Russia: "The Kostromskaya AES Has Not Been Built but It Is Very Dangerous"; followed by unidentified ADS report: "The Future of the Dalnevostochnaya AES Will Be Decided by the People"]

[Text] In December 1992 it was decided to resume construction of the Kostromskaya nuclear power station (KAES) which was originally started in 1988 in the village of Chistye Bory, Buyskiy Rayon. Currently construction has reached a zero cycle, though the Russian Law on Environmental Protection forbids "to locate, design, or construct nuclear power stations near major bodies of water of republic importance." The station is being built on a tectonic fault which has a high-level strata of ground water, and the soil is geologically unstable, resulting in washing away, sinkholes, and landslides. The KAES pond is to be located on the bank of the Kostroma river, which flows into the Volga. If radioactive waste seeps into the water, the whole Volga area will be contaminated.

Not a single Russian reactor, including the KAES, passed through state ecological experts; not a single one of them was mass produced—each one was built as an experimental one because neither technology was able to prove itself. No insurance company in the world would take on the responsibility of insuring Russian nuclear power stations.

In early 1993 the ecological movement "In the Name of Life" attempted, for the first time, to conduct a referendum against the construction of the KAES. Fifty thousand signatures were collected in support of it from oblast residents. The idea of the referendum was also supported by the Kostroma city council.

Similar referenda were conducted in Mordvinia and Nizhny Novgorod Oblast. In Nizhny Novgorod it was

decided to reorient the construction to a different production line, in spite of the fact that the reactor shop had already been completed. Mordvinia decided not to build any stations at all.

The construction of the majority of new nuclear power stations [AES's] in the Soviet Union was allowed by government decrees of the 1970's. At that time no evaluation as to whether it was economically feasible to construct such stations in their intended locations was carried out. Chernobyl put a stop to all construction. In 1991 the Russian Law on environmental protection set forth a new decisionmaking procedure allowing construction to begin and the criteria for choosing future station locations.

Certain conditions are necessary for the construction and operation of any nuclear station: adherence to the existing legislation and sanitary norms in the design and construction as well as a mandatory ecological analysis. The construction of many Russian AES's was resumed after the 1992 decree of the Russian Government. It describes the construction of the KAES quite clearly: Accept the ministries' proposals "on completing the work on engineering lines for the social infrastructure on the KAES site in 1993." In October 1993 state ecological experts rejected the draft "Comprehensive Program for the Development of Russian Federation Nuclear Power Facilities Through 2010." The construction of nuclear stations is continuing, however.

Some construction it is, too! The housing of the second reactor of the Balakovskaya AES was dropped during its installation, but only a superficial examination was done after the incident. When laying the foundation, pads of local limestone were used instead of marble ones, and ground water started to react with them and erode them. The units are settling unevenly and faster than expected by design, which creates stresses in the structure.

Thirty years ago the idea was to replace crude oil and coal with inexhaustible, cheap, and harmless nuclear energy. But the idea proved to be unsound, from both the ecological and economic points of view. Previously the cost of nuclear power failed to include the cost of procuring and transporting raw materials, and the expenses caused by accidents. The cost of burying a used-up unit is approximately the same as that of its construction. Nuclear energy is being nudged out of the energy-producing market.

The Future of the Dalnevostochnaya AES Will Be Decided by the People

The feasibility report on the Dalnevostochnaya [Far East] nuclear power station which was prepared by the St. Petersburg institute Atomenergoprojekt was handed over to the administration of Khabarovsk Kray and Solnechnyy Rayon, the intended location of the station. According to Yuriy Komov, head of the Far East Center for Energy Problems, no decision has been made yet on construction of the Dalnevostochnaya AES.

It is no secret that the eliminated kray soviet decided to build or accommodate nuclear power facilities on its territory only after the issue was presented to a kray referendum. Local organizations of the Democratic Forces of Russia movement and the "Greens" held several rallies demanding that the feasibility report be submitted for public discussion. But currently, Yuriy Komov thinks, it is unclear from the legal point of view who ought to make the decision about building a nuclear power station with four 440-megawatt units. At present time a public commission is being set up under the kray administration that will examine every aspect of the AES construction proposal.

Addendum to Edict on State Environmental Strategy

1WN0273B Moscow SPASENIYE in Russian No 7, Fe' 94 p 1

["Addendum to Edict No. 236 of the Russian Federation President of 4 February 1994: Basic Provisions of the Russian Federation Government Strategy for Environmental Protection and Provision of Stable Development"]

[Text]

The Basic Provisions of the Russian Federation Government Strategy To Protect the Environment and Ensure Stable Development represent a foundation for constructive mutual activity of Russian Federation organs of state power and its subjects, local administration organs, entrepreneurs, and public associations as they work on ensuring a comprehensive solution to the problems of a well-balanced development of our economy and an improvement of the environment.

Enforcement of the Russian Federation Government Strategy To Protect the Environment and Ensure Stable Development requires the implementation of our citizens' right to have a beneficial environment, which is stated in the Russian Federation constitution, and the right of future generations to utilize our natural resources potential with the purpose of maintaining stable development, as well as the resolution of current socioeconomic issues inseparably from implementing adequate measures for the protection and improvement of our environment and the preservation and restoration of our natural resources.

1. Safeguarding Ecologically Safe Stable Development Under Market Economy Conditions

To ensure ecologically safe and stable development, the government should regulate the use of natural resources and stimulate work on environmental protection by adopting streamlined socioeconomic, financial and tax policies under market economy conditions. Administrative activity should be oriented to achieving economic well-being combined with the ecological safety of Russia.

The basic directions of all work on ensuring ecologically safe, stable development are as follows:

Provide ecologically feasible locations for production facilities;

Maintain ecologically safe development of industries, the energy industry, transportation, and municipal services;

Maintain ecologically safe development of agriculture;

Ensure nonexhaustive use of restored natural resources;

Ensure rational usage of nonrenewable natural resources;

Expand utilization of secondary resources, recycling, and safe disposal and burial of wastes;

Improve management in the areas of environmental protection, utilization of natural resources, and prevention and elimination of extreme situations.

2. Protection of Human Habitation Environment

In order to create conditions allowing our citizens to exercise their constitutional right to live in a beneficial natural environment, the following basic directions are outlined:

Create a healthy human habitation environment in urban and rural locations;

Develop a network of recreational and health-care facility complexes;

Improve the quality of foodstuffs;

Provide the people with good-quality potable water;

Prevent pollution of atmospheric air and water reservoirs;

Ensure radiation safety of the population;

Prevent and diminish the dangerous effects of natural phenomena, technological accidents, and disasters;

Provide ecological education and training for the people.

3. Recovery (Restoration) of Damaged Ecosystems in Ecologically Unsafe Regions of Russia.

The following basic directions are set in order to overcome the intensifying disparity between the development of productive forces and preservation of the ecological balance in regions with an unsafe environment and to ensure natural development of ecosystems, preserve and restore unique natural complexes and locations when territorial economic issues are being resolved, by finding optimal modes of natural resources utilization and protection of the environment:

Remove some of the major cities and industrial centers from a critical ecological situation;

Eliminate the effects of radioactive contamination of territories;

Preserve the Baykal lake basin natural complex;

Implement the "Renewal of the Volga" program;

Restore the damaged ecosystems of the Black Sea coastal line;

Protect the population and coastal territories from the aftermath of the rising level of the Caspian Sea;

Preserve the natural complexes of the Onega and Ladoga lakes and the Neva inlet;

Resolve the ecological problems of the Far North while applying a specific mode of natural resource utilization;

Preserve and restore the ecosystem of the "Caucasian mineral waters" sanatorium and resort complex.

4. Participation in the Solution of Global Ecological Problems

The following basic directions are set in order to develop international cooperation for preservation, protection, and restoration of the Earth's ecosystem:

Preserve biological diversity;

Protect the ozone layer;

Prevent anthropogenic changes in the climate;

Protect and renew forests;

Develop and improve systems of specially protected natural territories;

Ensure safe elimination of chemical and nuclear weapons;

Resolve intergovernmental ecological problems (trans-border pollution, problems of the Baltic, Caspian, Black, and Aral Seas and the Arctic region);

Restore the ecosystem and hydrobionte species of the Azov Sea;

Resolve the problems of the world ocean.

Europarlament Ecologists Visit Defense Ministry

*MK1805112994 Moscow KRSNAYA ZVEZDA
in Russian 18 May 94 p 2*

[Vladimir Matyash report under the "In Brief" rubric: "Common Language is One of Ecology"]

[Text] Moscow—A meeting took place in the Russian Federation Defense Ministry between Major General Sergey Grigorov, chief of the Russian Federation Defense Ministry ecology and special protection funds directorate, and European Parliament deputies Christian Rousing and Freddy Blak. The visitors from Denmark saw for themselves how the storing and utilization

of nuclear weapons and propulsion plants in the army and the navy is done by experienced specialists with the aid of the most up-to-date technical monitoring equipment. Owing, however, to considerable cuts in nuclear arms and redeployment of missile units there is a lack of ecology specialists. The Europarlament deputies voiced readiness for cooperation in jointly training them.

Official Says Russia Seen as World's Dump for Toxic Waste

*LD1705213794 Moscow ITAR-TASS World Service
in Russian 1120 GMT 17 May 94*

[Report by ITAR-TASS correspondent Mikhail Karlov]

[Text] Moscow, 17 May—While being in possession of powerful technologies and facilities for processing and recycling toxic waste, the West, nevertheless, prefers to export this waste to other countries in Africa, South America, East Europe, or the CIS, which do not have such facilities. This is not an economic move but a purposeful political action in order to save themselves from the harmful anthropogenic effects of the waste. The West sees Russia as the preferred candidate for a world garbage dump, Valeriy Timofeyev, representative of the Russian Federal Counterintelligence Service, said today at a meeting of the inter-departmental commission for ecological safety of the Russian Security Council.

Judging by the report made by Aleksey Poryadin, first deputy minister for the protection of environment and natural resources, there are causes for concern. Russia produces annually about 7,000 million tonnes of waste, of which only 2,000 million (28 percent) are then used in the national economy. To date, 1,600 million tonnes of toxic waste have accumulated in the country. The situation that has come about in Russia with the formation, use, de-activation, storage, and burying of waste results in irreversible damage to the natural environment and poses a real threat to the health of Russian people.

Russia already has "waste storages" that can cause ecological catastrophes, but despite this, the import of foreign toxic substances to this country continues. There is an increasingly clear tendency to conclude deals on importing and recycling dangerous waste under the guise of foreign economic projects on recycling raw materials to extract valuable substances or on giving humanitarian aid.

'Environmentally Unfriendly' Buses Imported from Germany

*PM1705140594 Moscow IZVESTIYA in Russian
17 May 94 p 1*

[Mikhail Ovcharov report: "Buses Banned in Germany Appear on Streets of Kostroma"]

[Text] Kostroma—"Ikarusz" buses vividly painted with slogans in German have appeared on the streets of Kostroma.

The newspaper KOSTROMSKIYE VEDOMOSTI [Kostroma Bulletin] reports that, before entering Russia, the "Ikarusz" had punctually served Germans in the east of their country. But, in the wake of German unification, these buses were decommissioned as being environmentally unfriendly and were dispatched to this ancient Volga city, whose inhabitants, clearly, are long since used to heightened levels of exhaust fumes.

Radioactive Pollution Research Project May be Available in Oct 94

LD1605154894 Moscow INTERFAX in English
1327 GMT 16 May 94

[Text] The final results of a study into radioactive pollution in the Far East's seas, conducted in March-April by a Russian-Japanese-South Korean expedition, will be revealed not earlier than in October. Interfax learned this in the scientific-industrial amalgamation Taifun which was one of the organizers of the expedition to the Far East.

Currently, scientists have preliminary data on cesium-137. The study of sea water and bottom at sites where Russia had buried nuclear waste did not show excessive levels of radiation.

However, as Taifun noted, it would be possible to make a conclusion on whether nuclear waste damaged the environment only after a study of the data on the levels of strontium-90, plutonium, and a number of other radionuclides, expected to be finished not later than in October.

The expedition which was organized at the initiative of Japan and South Korea made a study of regions where Russia buried its nuclear waste. This summer it is planned to study the burial sites at sea of Japanese and South Korean nuclear waste.

Sunken Sub Komsomolets Not Endangering Fishing Industry

LD1205103294 Moscow Radio Rossii Network
in Russian 0900 GMT 12 May 94

[Text] At the present time there is no evidence whatsoever to suggest that the leaking of corrosive products and plutonium-239 from the torpedo warheads on board the Komsomolets atomic submarine could do any significant harm to the fishing industry of countries fishing in the Norwegian and Barents seas. This conclusion is contained in a report by experts of the State Ecological Commission of Russia's Ministry for Environmental Protection and Natural Resources. The experts say that, even if the most pessimistic forecasts prove correct, the dose which could be received by man if the plutonium escapes into the environment is significantly less than the annual permissible maximum which the human body can absorb. The conclusions of the expert commission were released by the press center of Russia's Ministry for Natural Resources.

Further on Report Concerning Komsomolets Sub Pollution

LD1205151594 Moscow INTERFAX in English
1404 GMT 12 May 94

[Text] "There is no information to suggest that the leak of corrosive plutonium-239 from the warheads on the Komsomolets nuclear submarine could cause a degree of damage to the fishing industries of countries which use the Norwegian and Barents seas and to the local population."

The conclusion was contained in an ecological report by an expert commission from Russia's ministry for environmental protection (Minprirody) on proposals for the further operation of the Komsomolets and on ways to minimize the emission of radioactive substances from nuclear warheads on board into the environment. Interfax received the information from the Minprirody press center Thursday.

The ecological report said that at worst the dose which any human being could receive from the emission of plutonium would be far lower than the permissible yearly intake of plutonium by the human body.

That conclusion can be backed up by a comparison of the plutonium content in nuclear warheads on board the Komsomolets (around 400 Curie) and the amount of plutonium in the Irish Sea, into which British nuclear enterprises had emitted a total of 2000 Curie without noticeable pollution being recorded in the fishing waters.

However, given the intensity of efforts to localize the source of radiation at comparatively low cost, the expert commission approved further projects for work on board the Komsomolets. The outer slits in the vessel's bow would, it said, be closed to eliminate the possibility of corrosive plutonium leaking from the torpedo installations in the future.

Infighting Delays Komsomolets Expedition

PM1605121394 Moscow IZVESTIYA in Russian
13 May 94 p 4

[Viktor Litovkin report: "The Sunken Komsomolets Puts Out SOS Signals"]

[Text] Sergey Khetagurov, deputy minister for emergency situations, has told an INTERFAX correspondent that 15 June this year the ministry will mount an expedition to the site of the disaster involving the Russian nuclear-powered submarine Komsomolets, which sank in the Norwegian Sea in April 1989. The purpose of the two-month expedition, aboard the research ship Akademik Keldysh, is to seal the torpedo tube hatches.

The submarine has two torpedoes on board with nuclear warheads, and these fill specialists with the greatest apprehension, the deputy minister said. "It is impossible

to rule out, in principle, a possible spread of radioactivity as a result of corrosion of their casing," he believes.

At the very same time Academician Vladimir Zuyev, department head at the Russian Academy of Sciences Institute of Oceanology, has sent a letter to the Russian president's staff. He reports that, despite the real possibility of a volley discharge of weapons-grade plutonium into the marine environment from the sunken Komsomolets, the expedition to it and the actual sealing of the vessel are in jeopardy. Leading specialists with rich experience of underwater work have been taken off it. The necessary ecological expert appraisal has not been carried out. There is no federal program for the reliable corrosion-proofing of an increased source of radioactive danger, and the necessary financial resources have not yet been allocated to this.

What is the problem here? Why does the situation with regard to the sunken Komsomolets elicit such increased attention and such contradictory assessments? Several nuclear-powered ships have sunk in recent years, and so much radioactive waste has been dumped in the oceans that the possibility of a leak of plutonium from two torpedoes appears a mere trifle compared with the constant discharge of radiation from these graveyards.

Dr. of Technical Sciences Tengiz Borisov, former chairman of the Committee for Carrying Out Special-Purpose Underwater Work, whose functions have now been transferred to the Ministry for Emergency Situations, believes that this is not quite the case. The question of ensuring the Komsomolets' radiation safety is far more serious than other similar tragic instances. There are several reasons.

First, the submarine lies off the coast of Norway, in Norway's traditional fishing grounds. The discharge of plutonium into the water—and traces of it were already detected last year, although they do not yet exceed the background values—could deprive that country of fisheries for hundreds of years, destroy the modern fish-processing industry, deprive tens of thousands of people of their livelihoods, and, as a consequence, drastically undermine Russia's prestige and force it to pay compensation running into many millions in foreign currency.

Second, Russia, its leadership, and its specialists still have the technical and economic possibility of preventing the radiation pollution of the ocean, corrosion-proofing the sunken vessel, and delivering Europe from the threat of an ecological disaster. But precious time must not be lost here. We are left with virtually the last chance of carrying out the work this summer. There will not be another opportunity—the torpedoes' beryllium casings are bound to break up within the next few months, and then all efforts will be in vain. True, not all the specialists familiar with the situation on the submarine share the anxiety of Tengiz Borisov, his colleagues at the Institute of Oceanology, or other scientists and practical underwater workers. Some of them—mainly employees of the Ministry for Emergency Situations—

maintain that fishing is not conducted at a depth of 1,700 meters, where the Komsomolets lies, and so there is simply no threat that plutonium will get into the fish diet and thence onto people's tables.

In addition, they say, in the opinion of nuclear scientists at the Scientific Research Institute of Experimental Physics at Arzamas-16, where the torpedoes' nuclear warheads were created, the discharge of plutonium following the destruction of the torpedoes' casings will not have appreciable radiation consequences either for the population or for the fauna. If a 100-percent discharge does occur, all the material will settle in a compact stain between 30 and 400 km long. At the same time the radiation doses will be virtually insignificant at the far limits of the seat of radiation.

The IZVESTIYA editorial office has a copy of this opinion of the Scientific Research Institute of Experimental Physics, approved by Academicians Yuriy Trutnev and Stanislav Voronin of the Russian Academy of Sciences, the chief designers of nuclear warheads. Its conclusions do not coincide with those reached at the Ministry for Emergency Situations. "It is not yet clear," the scientists write, "whether the uncertainty that exists at the present time in the estimates of seabed pollution by the fissionable products of plutonium corrosion can affect the global conclusion that 'the escape of plutonium from the nuclear weapons as their insulating casing is destroyed has no appreciable radioactive consequences....'" Further: "It is necessary to make a more detailed assessment of the possible movement of plutonium from the bed to surface layers as a consequence of the seasonal migration of plankton which winters on the bed and the competing processes of spreading of the plankton patch on the lifting of plutonium build-ups from seabed deposits...."

If we translate the scientists' words into simple language understandable to everyone, it becomes clear that large areas of plankton plastered with the decomposition products of nuclear warheads or, rather, precisely plutonium, have zero buoyancy. They can be moved by underwater currents any distance from the scene of the tragedy and thus end up, ultimately, in the food of someone living thousands of kilometers from the Norwegian Sea.

The academicians believe that it would be premature to conclude that in work with the nuclear-powered submarine Komsomolets it is possible to confine ourselves just to radiation monitoring; everything must be done to make naval weapons systems safe, bearing the possibility of accidents in mind. A similar conclusion was reached by the Russian Security Council Interdepartmental Commission on Ecological Safety, which discussed this problem at the end of last year.

What, then, is preventing this from being done today? Particularly as the Ministry for Emergency Situations, as

Sergey Khetagurov declared, is ready and has plans to carry out the special expedition to seal the stricken submarine?

In the opinion of many specialists with whom I have spoken about this, work on corrosion-proofing the sunken submarine is being hindered by departmental differences and by ambitions which, no less than the actual corrosion, are eating away at formerly amicable and united collectives.

The people who last year organized and carried out the unique deep-water experiment in the Norwegian Sea, who ascertained and analyzed the actual condition of the sunken vessel and its systems, and who used unique underwater robots to peep inside the Komsomolets, proposed their own program for corrosion-proofing it—packing the torpedo compartment with a special sorbent, isolating it from seabed currents by means of metal covers with rubber seals, and, in addition, giving the Ministry for Emergency Situations disinterested assistance in implementing it and working on the expedition on a voluntary basis. But there was not even a reply to their appeal.

At the same time the new structures of the Ministry for Emergency Situations, which have never before encountered such complex underwater work, are acutely short of such specialists. Yet in many cases they antagonize former employees of the Committee for Carrying Out Special-Purpose Underwater Work and other organizations. There is very little time left until the start of the expedition. It will be very difficult during the remaining days to make up for what has been neglected during the preceding months.

Ships with deep-water apparatus on board could be delayed from putting to sea because ecological expertise and money are lacking and all the necessary equipment has still to be prepared. The favorable weather in the ocean will pass. Then will come new interdepartmental accusations, a search for guilty parties.... Who will benefit from this?

Experts of my acquaintance believe that in the interests of the getting the job done the departmental differences and ambitions must be overcome and discarded. We must not reject anybody's help, because too much is at stake. Not only the country's prestige but also people's health. There is an extremely great need today for a government program for the corrosion-proofing of the sunken submarine—a program approved by the president and with powers to involve all the necessary organizations and structures in this operation. We must not put our trust in foreign assistance. We ourselves are capable of rectifying what we have done.

This is now becoming a matter of honor for the country and its specialists.

Stolen Cesium Thought Dumped in Nikolayev Plant Reservoir

PM1305110994 Moscow Ostankino Television First Channel Network in Russian 2000 GMT 12 May 94

[From the "Novosti" newscast: Video report from Nikolayev Alumina Plant by Ivan Petkov, identified by caption; figures in brackets denote broadcast time in GMT in hours, minutes, and seconds]

[Text] [201103] [Petkov over aerial views of Nikolayev Alumina Plant] The Nikolayev Alumina Plant, the biggest of its kind in Europe, is in trouble because of a minute capsule containing pure and hence particularly radioactive cesium. Criminals removed the capsule from a measuring instrument in the hope of lining their pockets by selling the valuable metal. Twenty of the plant's workers have so far been affected. Three had to be dispatched to Kharkov for special treatment at an institute. An investigation is under way.

Meanwhile specialists have worked out that 200 cubic meters of contaminated soil will have to be removed from the plant's territory and buried. An even bigger quantity of water will have to be removed from the reservoir where water for fire-fighting purposes is kept. It is assumed that the ill-fated cesium capsule is resting at the bottom of this reservoir. [201147] [video shows extensive aerial views of Nikolayev alumina plant and reservoir]

Commission Discusses Radioactive Waste Disposal Problem

PM1105103994 Moscow IZVESTIYA in Russian 11 May 94 p 5

[Natalya Ostrovskaya report: "Firms Will Compete for Right To Build Nuclear Waste Reprocessing Facilities for Us"]

[Text] Vladivostok—The Pacific Fleet is not going to pour any liquid radioactive waste—a by-product of the destruction of nuclear submarines—into the Sea of Japan before the end of the year. That is the only specific accord reached during the work of the Russian-Japanese commission on the problem of liquid radioactive waste. A statement to that effect was made by Yevgeniy Stomatyuk, chairman of the Maritime Kray Administration Natural Resources Committee and member of the Russian-Japanese commission, on his return from Tokyo.

Prior to Tokyo the commission, under the cochairmanship of Nikolay Yegorov, Russian deputy atomic energy minister, and Amano Yukiya [name as transliterated], head of the Japanese Foreign Ministry Nuclear Energy Department, visited Vladivostok, then the city of Bolshoy Kamen which, as is well known, is where old navy tankers full of radioactive water stand moored at the Zvezda Plant, and also Sysoyev Bay. The latter is the

site of a support center, the so-called sedimentation ship division and the base where Pacific Fleet submarines are cut up for scrap.

The Maritime region was included in the itinerary solely at the Japanese side's insistence, which is perfectly understandable. Since the problem of recycling liquid radioactive waste is going to be resolved using resources allocated by the Japanese Government, it is clear that it is time to put an end to the secrecy and display the potential sites for the construction of the reprocessing complex. No one doubts that one is needed today. After all, even though the process of cutting up nuclear submarines is still going on at the Zvezda Plant, all the liquid radioactive waste tanks are full and there are approximately 2,000 cubic meters of radioactive water stored there at present.

According to the specialists, the most logical thing of all would be to set up the complex for the recycling and reprocessing of nuclear waste right here at Zvezda. But the inhabitants of Bolshoy Kamen opposed this method of resolving the problem and the Russian-Japanese commission decided to look for another solution.

Without coming to any definitive or irrevocable decision, the commission has arrived at two preliminary options.

Option one is the construction of a mobile complex for the recycling of liquid radioactive waste, in other words a floating installation capable of moving freely at sea and taking waste products from ships and from shore-based storage facilities. Such an installation could be produced in six months, according to the assurance given by the Japanese.

Option two includes the construction of additional fixed containers for liquid radioactive waste and a shore-based reprocessing complex in Sysoyev Bay. The containers could be built in three months, the complex in a year.

It will become clear by mid-May which of these is the preferred option. By that time representatives of the Crown Agents, a British firm of consultants who took part in the commission's work, have pledged to produce an estimate of the cost and economic expediency of each option.

When the final choice has been made it is proposed to put the best plan out to tender. In the commission's opinion the contract will go to whoever can guarantee to fulfill all the necessary technical and economic conditions at the lowest cost. Anyone will be allowed to tender. It is presumed that this will mean Japanese, Russian, and U.S. firms above all.

So, if everything goes according to this plan, it may be hoped that within about four months the ill-starred and ramshackle TNT-5, the subject of much discussion for six months now, will finally be separated from its liquid radioactive cargo. But what about now? After all, if the Maritime Kray Administration is to be believed, this

vessel is only notionally seaworthy because it could spring a leak at any moment or sink to the bottom without warning. To avoid protest actions by local inhabitants on the one hand, and problems in dealings with neighbors in the Sea of Japan on the other hand, the commission came up with what it believes is a compromise solution: The TNT-5 will be towed further away from the Bolshoy Kamen protesters. It is hard to guess right now just where that will be and how it will be done because the tanker is dilapidated and was written off two years ago. Perhaps it will be towed out into Sysoyev Bay....

Here is an interesting detail. For the first time in the history of this question, the very highest Russian authorities gave the Japanese permission during the commission's work not only to visit the Zvezda Plant but also go aboard the legendary TNT-5. However, the prudent visitors declined to visit the TNT after they had checked it with their personal dosimeters and registered a reading considerably above the radiation background. I wonder what was felt at that particular moment by those people who, by the whim of an evil fate, were unlucky enough to be doing their fixed-term service aboard this dangerously radioactive tub? Perhaps the sailors and commanders of the illustrious Pacific Fleet feel that for six months they have been guinea pigs who have helped to show the effect of the prolonged exposure of the human body to small doses of radiation.

Semipalatinsk Testing Ground Background Radiation Discussed

*LD1105163094 Moscow ITAR-TASS in English
1439 GMT 11 May 94*

[Report by ITAR-TASS correspondent Valentin Pavlov]

[Text] Barnaul May 11 TASS—A three-day session of the Scientific Council of the programme to investigate the "distant radiation after-effects of the Semipalatinsk nuclear tests on the population of Altay territory" began here today.

Invited to take part in it, in addition to the participants of the "Semipalatinsk programme", were scientists from almost 60 research institutes, who have discovered hitherto unknown documents on Soviet nuclear tests, and their opponents.

The participation of the latter, according to Valeriy Kiselev, director of the regional Medico-Ecological Problems Research Institute, is most important, because their views will allow the session to see more clearly the weak points of the programme and to further the ongoing investigations.

As distinct from previous sessions, the current one will work only in plenum, which will allow it to create new conditions for the inter-disciplinary interaction of various specialists: Physicists, chemists, biologists, physicians and social scientists. Such complex studies are most necessary today. After all, Altay, which was affected by more than 58 nuclear blasts in the period

from 1949 to 1990, and also by the first explosion of a thermonuclear bomb in August 1953, was turned into a sort of "human survival testing ground". Only the picture of the 1949 explosion was modelled so far. Much work is yet to be done on the other tests. But the after-effect of Soviet nuclear tests on the Altay population is well known. They are more terrible than those of the Chernobyl disaster, because the local population was exposed not once, but many times over to irradiation with radionuclides with a short period of decay.

The session will analyse in detail the incidence of diseases among the territory's population, which was affected by explosions on the Semipalatinsk testing ground. According to Kiselev, the international scientific community expects from the parties to the programme a thorough analysis of the medical after-effects of nuclear tests, because a massive examination of all the people affected by radiation was carried out for the first time in Altay, which has involuntarily become a sort of research laboratory.

The session will discuss the results of 1993 scientific works and the main directions of further studies. Moreover, it will be an important landmark in the preparations for an international conference on the "radiation test" programme, which will be held in Altay this September.

Impact of Semipalatinsk N-Tests on Altay Kray Discussed

PM1705121194 Moscow ROSSIYSKIYE VESTI
in Russian 17 May 94 p 2

[Andrey Illarionov report under the "News" rubric: "Nuclear Trail of Semipalatinsk Test Site"]

[Text] Barnaul—The scientific council for the program entitled "The Remote Consequences of the Effects of Radiation From Nuclear Tests at the Semipalatinsk Test Site on the Territory of Altay Kray," organized by the kray administration and the Institute of Regional Medical and Biological Problems, opened its proceedings in Barnaul 11 May.

The results of the scientific work on this problem, highly topical to this day, and avenues for further research were summarized in reports by Valentin Koptug, chairman of the Russian Academy of Sciences Siberian Department; Valeriy Trufakin, chairman of the Russian Academy of Medical Sciences Siberian Department; and program leader Professor Yakov Shoykhet.

A broad circle of scientists from Siberian cities, from Moscow, and from the states of the former Union republics are taking part in the discussion. The scientific council is continuing its work.

ARMENIA

1993 Ecological Yearbook Issued

94WN0271A Yerevan RESPUBLIKA ARMENIYA
in Russian 4 May 94 p 2

[Press release by Armenian Press Service: "Ecological Bulletin—93"]

[Text] According to the Republic Environmental Monitoring Center the state of the air basin of the cities in Armenia last year created the following picture. In Yerevan of the 13 indices taken under control, four, including that on dust, exceeded established levels. By comparison with 1992, however, the average annual and maximum density of harmful substances decreased.

This is reported in the annually issued "Ecological Handbook" of the Ministry of Environmental Protection. Evaluating the pollution of the air basin of populated points with toxic emissions the handbook reports an overall comparative decrease in their amount in a number of other cities of the republic where measurements were taken at regular intervals. But with regard to specific compounds (carbon monoxide, carbon dioxide, and others) the indices are yet to reach acceptable levels.

Samples for the analysis of water surfaces were not taken from all of the rivers in the republic because of the lack of transportation and fuel, which does not allow an accurate and comprehensive general characterization. Nevertheless it was established that permissible levels of ammonia ions, nitrites, petroleum products, and copper are being exceeded. At the same time changes in the average annual density of these substances are not noted.

Inspection services of the ministry checked the work on environmental protection at 1,645 facilities in the republic and found 1,683 violations of environmental laws in connection with which 25 cases were forwarded to legal investigative agencies. The operation of three facilities was stopped. Demands for reimbursement of damages were prepared in connection with violations occurring at numerous enterprises, including Araratsetment, Armenergoprom, and the Yerevan TETs [Heat and Power Station].

The Administration for the Protection of Fisheries is conducting an inventory of artificial water reservoirs with the participation of interested organizations to establish a true picture of existing fish species and populations and also for the proper organization of state fishing. The administration recorded 231 cases of illegal fishing and fined 200 individuals. In the course of raids made at the Sevan National Park some 256 nets and three seines, along with eight rubber boats, and several thousand kilograms of fish were confiscated.

BELARUS

New Waste Processing Complex Is Built in Gomel Oblast

WS1305095794 Minsk Radio Minsk Network
in Belarusian 1950 GMT 12 May 94

[Text] The building of the first waste processing facilities—dealing with the treatment of solid household and industrial nontoxic waste—was begun in the village of Barba, Vetkovskiy Rayon, Gomel Oblast. Construction is to be completed by late (1994). Then, this processing complex will begin treating the waste from Gomel enterprises. The cost of construction is covered by some 100 Gomel enterprises with which the Gomel Executive Commission signed agreements on sharing expenditures for this project. Gomel authorities had to make this decision when Dorofeeva, chairman of the State Committee for Ecology, and the Belarusian Government refused to earmark financial assistance to them. According to Alyaksandr Titov, chairman of the Gomel Office for Ecology and Radiological Security, he does not understand why the State Committee for Ecology does not use this unique occasion to work out the technology of construction and operation of this complex to eventually free the city from dumping grounds.

UKRAINE

Ukraine Minister on Integration of Economic, Ecological Reform

94WN0263A Kiev HOLOS UKRAYINY in Ukrainian
20 Apr 94 p 6

[Article by Vasyl Shevchuk, deputy minister of environmental protection of Ukraine, doctor of economic sciences: "The Effect of Harmful Wastes. Ways To Integrate Economic and Ecological Reforms in Ukraine"]

[Text] Centralized administration of Ukraine's economy over a prolonged period of time caused it to develop with huge structural disproportions. The ecological problems it inherited are primarily the result of the improper use of natural resources.

The inefficient economic system with ownerless property and administrative redistribution of funds promoted wasteful use of resources and inefficient energy consumption in monopolized production. Heavy industry with its resource-intensive technologies accounts for 61 percent of the gross domestic product in Ukraine's economy as against 34 percent in the economies of EC countries. The power-output ratio in Ukraine's gross national product is the highest among the countries of the former Soviet Union. It is nine times higher than in the countries belonging to the Organization for Economic Cooperation and Development [OECD], and nearly four times greater than in countries with higher than average per capita income.

This is what has created the "Ukrainian phenomenon" in the economy, which combines world prices with meager wages and a scarcity of goods. This same situation provides a key to defining the ways and methods for conducting economic reforms. The transition from centralized planning to a market economy must also include improving the environment by imposing harsh penalties for massive, unwarranted squandering of resources.

The principal factors that could promote progress in improving the state of the environment include ending political and administrative interference in price formation and setting wage rates, introducing a system of incentives through taxes and payments, using economic methods to equalize starting conditions in state enterprises and sectors, eliminating the interdependence of prices and revenues and material outlays, demonopolizing and restructuring production potential, restricting the access of enterprises to government money (budget restrictions), and abolishing subsidies for the use of such natural resources as energy, minerals, and water.

The decline in production is significantly reducing pollution. Market reforms provide an opportunity to preserve and reinforce this effect for the next decade by encouraging a shift towards resource-conserving and clean technologies and forms of activity. As industrial capital renewal proceeds, the dumping of most substances that pollute the environment can be maintained at a stable level or even reduced if there is rapid economic growth. Industrial restructuring will affect water pollution to a lesser degree, because most of these wastes come from agriculture, household plots, and public utilities. Consequently, in the long term, attention will have to shift from air to water pollution.

In the process of economic reform, we may discover advantages in stimulating investments in environmental protection in the private sector, especially if it can reduce undesirable results. Investments in environmental protection in the industrial and power sectors must conform to the lowest-cost principle and to the process of making decisions in the private sector. On the whole, the key factor in improving the state of the environment lies in the integration of environmental needs with the structure of sectorial policy. Abolishing subsidies for energy will result in reducing consumption and promote the use of new resource-conserving and cleaner technologies.

As a result of the critical shortage of available resources, divergences between economic and environmental interests will grow. Some of the old enterprises will continue to operate, because closing them would cause substantial social losses. Such enterprises must be required to implement environmental protection measures that do not require large financial outlays. Improvements can be achieved at most old enterprises simply by introducing "efficient management" (more painstaking repairs, combatting waste, installing improved regulating and monitoring equipment, applying more stringent standards in managing production and processing methods). These

measures are very important, because it is not possible to introduce clean technologies on a large scale until new markets for the sale of various kinds of production are created and until the economic capability of enterprises is assured.

Privatization will promote market reforms. The government can speed up privatization and promote progress in the field of environmental protection by establishing clearly defined rules regarding responsibility for causing damage (harm) to the environment in the past and by making new owners liable for all pollution by toxic substances that results from their activity. In many cases, the state itself must assume responsibility for causing damage to the environment in the past. An audit of balance sheets (inventory) in the field of environmental protection must be conducted immediately in order to distinguish between the pollution caused in the past and that being caused now. And if production at privatized enterprises does not meet the necessary standards, stricter antipollution standards should be gradually phased in.

In the future, the structural reorganization of industry will lead to a reduction in the harmful effects of pollution on human health in a specific region as those employed in inefficient and harmful industries, which are subject to closing, are provided with opportunities to find new jobs, as economic activity picks up, and as the surviving enterprises accumulate sufficient funds to invest in new technologies.

Conducting an ecological and technological audit will enable us to collect the most important data on enterprises that do not lend themselves to privatized operation and to plan tasks for the short term.

In an economic system based on achieving gross production indicators, the state allocated less than half a percent of the gross national product for environmental protection, which failed completely to compensate for the damages and losses caused by the technogenic volume. Until now, an enterprise's economic liability for polluting the environment has been purely symbolic and has not exceeded 1.5-2.0 percent of its profit.

The creation of a new economic system of environmental use and environmental protection measures as part of the transition to a market economy must become an integral part of the system for managing and regulating the economy.

The principal elements of this economic mechanism must be:

Payment for special use of natural resources;

Payment for polluting the environment;

A system for financing and extending credit for environmental protection measures (state and local budgets, environmental protection funds, banks, enterprise funds, foreign investments, etc.).

To ensure that these fundamental goals are achieved and to create a system for financing environmental protection measures, a fixed percentage of the gross national product must be earmarked in the state budget for spending on measures to protect the environment. According to estimates prepared by the ministry of environmental protection and the ministry of the economy, this amount can and must be no less than 0.9-1.0 percent of the GNP. The greater portion of this money should come from payments for the special use of natural resources (water, minerals, etc.) and payment for land. The remainder of the environmental protection costs should be met by the local budgets, ecological funds, and the enterprises' own funds. An effort should also be made to encourage the development of ecological business enterprise and the extension of credit by banks for investment in environmental protection. Taking into account the present ecological state of Ukraine, it is necessary to increase the proportion of environmental protection expenditures to 3-5 percent of the GNP.

The funds earmarked in the state budget of Ukraine for environmental protection measures should be kept separate and used to finance priority national and regional programs and measures. The construction of environmental protection projects using centralized capital investments must be conducted on the basis of government contracts. The ecological funds and banks must protect these funds against inflation. It is also necessary to create a favorable climate for investments and an effective system of realizing foreign investments in the Ukrainian economy in general, as well as in the protection of the environment.

Article Warns of Imminent Man-Made Ecological Hazard

AU1305175794 Kiev MOLOD UKRAYINY
in Ukrainian 11 May 94 p 3

[Article by Tetyana Khomych: "The Lake of Death. It Actually Exists On the Map of the Dnieper Region"]

[Text] Geologists discovered it, by accident, five years ago. They explored a site for working an uranium ore deposit similar to that near the Devladove Station in Sofiyivskyy Rayon that functioned for 15 years. Ore began to be extracted there in 1965-68 by an original method developed by Moscow design institutes. What it really was did not become known to the general public until 1989, when the project was declassified. By that time, the deposit had not been worked for about six years, and it might have become a mystery forever if ecologists had not decided to find out more about some of the figures.

There is a danger that the discovered lake will not remain "silent" forever, but may declare itself in a most terrible manner. If this does take place, Ukraine will have yet another Chernobyl, and this time it will be brought with water....

Here is what the chief ecologist of the Dnieper Research Center at Ukraine's Academy of Sciences, Hryhoriy Shmatkov, said, in particular, about the subsurface lake. The emergence of this affliction was brought about by... Ukraine's mineral wealth, particularly by its uranium ores. They usually occur under the earth's surface as compact layers in the form of a subsurface block. A borehole was drilled to a depth of between 50 and 70 meters, and, through it, concentrated acids were pumped into the layer. They completely dissolved the uranium ore, and the associated minerals transformed them into pulp. After that, a new borehole was drilled, the liquid was pumped out through it and taken for enrichment. The process was repeated every 25 meters. In the course of a single operation, a mixture made up of 205,000 tonnes of concentrated sulfuric acid, 66,000 tonnes of concentrated nitric acid, and 25,000 tonnes of concentrated nitric ammonium got underground. Such a mixture is capable of dissolving anything, it even turned soil into pulp—specially treated pumps and pipes could only withstand it for several months.

After the substance was processed and enriched uranium was obtained, the radioactive waste was again pumped into the ground in the form of pulp. This process continued for at least 11 years and now, in accordance with estimates by specialists, there are between 6 million and 7 million tonnes of such radioactive acid waste under ground. It is in a semi-liquid state, and the lake, which will only cease to be radioactive in 200 or 300 years, is capable of drifting.

In accordance with conclusions by specialists, the lake moves by approximately 20 meters a year. This is due to the fact that its front is somewhat inclined, since earth horizons are also not quite horizontal. If one multiplies 20 meters by 200 years, it will become obvious that, over that stretch of time, the lake will advance by kilometers. The most terrible thing, however, is the fact that, on its path, it may come across fissures, aquifers, or sandstones. Then the "water" from the subsurface lake of death may percolate into subsurface wells, from which the life-giving moisture is today supplied to the majority of populated areas in the region. People will become ill and will not know why....

It is true, though, that Moscow specialists, who were first to have detected that lake (it had not, obviously, been planned by the designers and not even foreseen), are trying to convince us that nothing "terrible" will happen. However, ecologists have reasons to doubt these reassuring conclusions. For example, one of their initial assertions to the effect that the lake, having come across clayey layers, will not penetrate them proved erroneous. Local geologists disprove this. Yet another circumstance is taken into account: The special geological team, which discovered the lake, did not arrive in the Dnieper Region for noble purposes. Its goal was to locate yet another deposit, similar to the one in Devladove, and only the social processes of 1989 thwarted this intention. However, is it in the interests of Moscow geologists to show their hand in full and make public what was done to

Ukrainian land by other imperial "specialists"? The Moor has done his duty, and the Moor has left....

At the same time, Ukraine has remained with yet another headache and, who knows, it may become no less severe than that caused by Chernobyl. Today, ecologists raise the question of the most stringent control over the movement of the lake and over the quality of drinking water in the surrounding area. It is practically impossible to neutralize the lake, because huge sums of money will have to be invested in order to build a special plant, manufacture special substances, drill new boreholes, and pump these neutralizing substances into them. So, it is only realistic now to conduct permanent monitoring and research and open a laboratory or a station in the area of the lake for conducting the necessary studies, making forecasts, and so on. However, this is also capital, and it will fall as a burden upon our budget.

However, this is the fate of all colonial countries, such as Ukraine was until recently. Those who want to see it within some "union" again must realize that they not only vote for the absence of a Customs officer at the Russian-Ukrainian border, but also for new Chernobyls and lakes of death on Ukrainian land. It is necessary to remember this.

Officials on Demilitarization, Environment Damage in Crimea

*WS1305125494 Simferopol KRYMSKAYA PRAVDA
in Russian 5 May 94 p 3*

[Article by Acting Crimean Interior Minister V. Kuznetsov, Crimean Ecological Center Chairman V. Rysich, and V. Tarasenko, chairman of the "Ecology and Peace" association: "Crimean 'Russian Island?'"]

[Excerpts] The "Ecology and Peace" association in the Crimea has repeatedly expressed its justified concerns over the environmental situation in areas of our peninsula occupied by military units and facilities. It is also alarming that there is no environmental control on these areas. Whereas Crimea's civil ecological service has an efficient scientific and practical potential (even though certain shortcomings still exist), the corresponding service carried out by the military in, for example, the Odessa Military District, is performed by...two specialists, as we have already reported.

The "Ecology and Peace" association has expressed its concern in a letter to the Ukrainian defense minister. In response, the military department concurred with the Crimean specialists' assessment of the situation at military bases, has expressed its full understanding, and concluded that there is no money for action.

We are not, however, facing a case that if someone does not want to do something he cannot be forced to do so.

We must act! This is why the three seemingly different specialists have united under the one "roof" of this article, to tell readers the truth about the environmental

situation in military towns. [passage omitted on nuclear tests conducted by the USSR in the 1950's]

Do not think, however, that all the misery is far away from the Crimea. Similar events are taking place at the Bagerovsk military range (it is now a radioactive dumping ground).

At a briefing in the Crimean Supreme Council, the range's deputy commander announced that personnel protecting the radioactive dump site are slightly inert and sleepy, and that something resembling lichen has appeared on the servicemen's skin.

The statement was made on 14 May 1993. Even though our specialists requested that the Ukrainian Defense Ministry examine the facility, nobody has so far bothered to do so. The response is always the same—there is no money. Regretfully, this response has not been presented to the mothers whose children are serving at the Bagerovsk range. We would not envy those who would have to do that! As a matter of fact, this is just another version of the Russian island in the Pacific Ocean [site of nuclear tests]. In that case, however, more than 50 admirals and officers were brought to account.

One official document of the former General Headquarters dated 1988—a protocol on military facilities' harmful impact on the Crimean environment—listed many garrisons, facilities, and units in which other environmental "dangers" had been discovered. The document included advice and recommendations as well.

Absolutely nothing has changed since then. Our recent survey has revealed that no environmental certificates are held in military towns, oil warehouses do not have appropriate capacities to store oil sediment, sewage systems do not work in most military units, etc.

Another extraordinary accident has recently occurred—the spilling of oil products in Sevastopol Bay. On the same day as we had a conversation at the State Committee for Environment Protection, reports of a new spill came in. In one of the military units deployed in the city of Saki, according to witnesses, 240 tonnes of oil products seeped into a resort lake. Meanwhile, there is a document in force, signed by all the "power" ministers, which obligates all civilian and military leaders to exchange information on emergency environmental situations. Apparently, however, nobody has been demanding its implementation.

The authors of the article not only approve and support the president's program for gradual demilitarization of the Crimea, they can also provide a specific program for implementing it. Resources released in this process could be used in resolving social needs and environmental problems. The program for gradual demilitarization will contradict neither Ukraine's laws nor its Defense Ministry's military doctrine.

Fire Safety at Chernobyl Remains Inadequate

PM1905120194 Moscow IZVESTIYA in Russian
19 May 94 p 5

[Article by Svetlana Tutorskaya: "Doctor Achilles' Fire Alarm. An International Expert from Frankfurt Inspects CIS Nuclear Power Stations"]

[Text] Even tragedies can turn into farce, apparently. A year or so ago information was published on the extremely poor fire protection at the Chernobyl Nuclear Power Station.

You might expect, after everything that had happened, that the station would be properly protected against fire. A year ago, when Doctor Achilles delivered his report at an international symposium, he showed some slides: Rusty hydrants, which would be hard to operate when trying to get water into the hoses in the event of a fire; emergency exits clogged up with garbage; failure to observe the rules for dividing the station area into sections that can be sealed off, with special fireproof doors....

According to the international rules, Doctor Achilles said, the buildings must have a fireproof partition with a special door every 60 meters. But at the Chernobyl Nuclear Power Station this year, as last, you can cover 200 meters and not encounter a partition. This means that, if a calamity were to occur, the fire would spread like lightning, without hindrance. The fire protection system has not been put into shape in the year since the first inspection at the Chernobyl Nuclear Power Station.

How many years now has a vast multitude of people been enduring the consequences of the Chernobyl accident—a massive accident with massive consequences. As the oncologists predicted, there continue to be more and more cases of thyroid cancer among children exposed to radiation. People from various countries are pooling resources and efforts (the new child cancer experts' seminar that has just been held in Minsk was an example of this) to devise a treatment strategy, indeed to provide basic drugs and equipment for sick children. I do not have to remind you that it is all very expensive. According to the experts, the personnel responsible for fire protection at the Chernobyl station are military people without special training, and there are only 14 of them. There are four on duty at night and two by day—in the enormous station building. Many of the instruments that are intended to warn of the danger of a fire are in locked closets and are not freely accessible. Instead of special fireproof doors you have conventional doors, which would rapidly melt in a big fire, and in some cases simple wooden doors.

The EC is allocating funds to plug these gaps, although the money has not been received yet. But what money do you need to provide free access to instruments and clear away garbage blocking emergency exits?

Electricity produced by the Chernobyl Nuclear Power Station goes to Austria, and the station is making good money. But it remains an open question why, here and at other nuclear power stations, notably Zaporozhye (also visited by an international commission recently), they have virtually the same, forgive me for saying so, fire condition red.

If the technical impotence and nihilism of the station personnel are cause for amazement, then Doctor Achilles

himself is a source of equally strong emotion. Do you think he stamped his feet and hollered "I'm leaving"? Not a bit of it. He is quite determined to effect positive changes in the mental outlook of our engineers and technicians—a truly Herculean task. Without making a song and dance, doggedly and systematically, Achilles is getting through and securing a willingness to cooperate. It is to be hoped that the impetus is converted into positive change before, God forbid, fire breaks out again owing to faulty wiring, negligence, or whatever.

REGIONAL AFFAIRS

Siemens Process Decontaminates Swedish Reactor Vessel

BR1905080094 Bonn TECHNOLOGIE-NACHRICHTEN
MANAGEMENT-INFORMATIONEN in German
25 Mar 94 p 21

[Text] The CORD [chemical oxidation reduction decontamination] process has successfully been used to decontaminate a nuclear power station reactor pressure vessel for the first time in the world. CORD, which was developed by the power generation (KWU) division of Siemens AG, has thus proved its efficacy in this field as well.

In addition to the reactor pressure vessel, all four circulation loops and the reactor water purification and residual heat removal system in the Swedish Oskarshamn 1 nuclear power station (442 megawatts) were decontaminated in 13 days. The test results available to date show that well over 99.6 percent of the radioactivity was flushed out, in other words that the average decontamination factor was much greater than 200.

This process makes it possible to convert all the chemicals involved into carbon dioxide and water without residue, even while the decontamination work is still under way. On completion of decontamination, therefore, the water reacquires demineralized water quality. The dissolved cations and radioactivity have been removed by the ion exchanger filter in the reactor water purification system, thus requiring no additional ion exchanger. Once the reactor pressure vessel had been hosed out with high-pressure water, it showed only a "residual wipe-off activity" of about 4 Bq/sq.cm. The dose rate at the bottom of the vessel was lowered by more than 20 mSv/h to under 0.02 mSv/h, and this extremely low radiation level now makes it possible to carry out the relevant tests and repair work.

Following the positive results obtained with CORD, Siemens-KWU has been commissioned to undertake a similar job in Finland, where the 300-cu.m primary system of the Lovisa nuclear power station is scheduled for decontamination in August 1994.

Denmark To Host Meeting of East European Environment Aides

PM1105151494 Copenhagen BERLINGSKE TIDENDE in Danish 10 May 94 p 10

[Steen Voigt report: "Auken Brings Together Eastern Europe's Top Environmental People"]

[Text] The environment ministers of all the countries of Eastern Europe will meet in Copenhagen in June at the invitation of Svend Auken to discuss "soft loans" for environmental investments. The aim is to accelerate environmental work in the East.

It is of crucial importance for improved and increased environmental work in the countries of Eastern Europe that they have access to cheaper forms of finance for their environmental investments—in water and air purification installations, for example.

So said Environment Minister Svend Auken (Social Democratic Party) who has invited all his East European counterparts to Copenhagen for the first three days in June to discuss "soft loans" in the environmental field in order to exert pressure on international banks.

The environment ministers from the three Baltic countries, Russia, Poland, Romania, Bulgaria, the Czech Republic, Slovakia, Belarus, Moldova, and Ukraine have accepted the invitation. This is the first time that so many East European environment ministers will have been brought together.

"Like the countries of Eastern Europe Denmark is tired of the fact that reports are written and large-scale investigations are carried out without anything coming of them," Svend Auken said yesterday when he announced the meeting. "Now we want to show that something can be done."

Svend Auken has long been pressing the EBRD [European Bank for Reconstruction and Development], for example, to grant cheaper "soft loans" with lower interest rates, longer repayment periods, and a repayment-free period if the loan is for environmental purposes.

Today international banks do not have different interest rates for purely commercial loans and environmental loans. This is slowing down the environmental work in Eastern Europe whose countries with their weak currencies need an immediate economic return rather than an environmental return from their investments.

"The idea behind the meeting is to influence the decisionmaking processes of the banks, but also to make this into a major issue when we meet in Sofia next year at the pan-European environment conference," Auken said.

Representatives of the EBRD, the World Bank, The European Investment Bank, and the EU [European Union] Commission have also been invited to the meeting in Copenhagen.

DENMARK

Energy Minister: Environment Top Priority in Energy Policy

94WN0265A Copenhagen BERLINGSKE TIDENDE in Danish 19 Apr 94 p III 4

[Article by Kaj Skaaning: "The Energy Minister Puts the Environment Above a Free Energy Market"—first paragraph is BERLINGSKE TIDENDE introduction]

[Text] The energy report: The environment must not suffer when there is energy liberalization, writes the energy minister in the energy policy report that will be submitted to the Folketing on Thursday [21 April].

The Danish Government will help support a broader liberalization of European energy markets only if some significant prerequisites are fulfilled.

According to the energy policy report, which Energy Minister Jann Sjursen (Christian People's Party) will submit to the Folketing on Thursday, the government will emphasize three main points.

First, there should be a clear connection between an opening of energy markets and concern for environmental protection. Second, transitional arrangements should be ensured—not least with regard to the young Danish natural gas sector. Third, the subsidiarity principle should be maintained.

"It is the government's position that the liberalization proposals not be dealt with in isolation but be seen within a greater energy policy context in the European Union [EU]," Sjursen will tell the Folketing on Thursday.

EU's Environmental Requirements Should Be Made the Same

He believes that special emphasis should be put on a greater effort in the environmental area. A liberalization of the electricity and gas markets must not be promoted at the cost of more environmentally sound forms of energy production. Increased competition should be followed up with joint and more ambitious EU environmental requirements so competitive conditions will become the same.

Among other things, the government will work for a common CO₂ excise fee within the EU, but it will also work to ensure that the liberalization proposals establish only overarching principles.

The working out [of details] and their regulation should be left to member countries.

Denmark is ahead of other countries when it comes to reducing CO₂, and in his report Sjursen sticks to a Danish goal of a 20-percent reduction of CO₂ emissions by 2005 in relation to 1988. And he made no effort to conceal the fact that special emphasis would be placed on energy consumption by industry.

Industry Must Bear the Brunt

"The government feels it is crucial that emphasis be put on making industry's efficiency measures in the area of energy consumption more cost effective. There is still in fact a significant potential for further efficiency measures in industry. If this potential is not utilized, then households will have to institute even more expensive

measures to achieve the goal while relatively cheap savings possibilities in industry remain unutilized," Sjursen says in his report.

Sjursen believes that environmental and energy excise fees can be implemented without reducing competitiveness. Excise fees should be behavioral in nature and the proceeds be returned to industries "in a compensatory fashion."

But the average Danish consumer of energy as well is to be made to alter his behavior. A committee has come out with a number of recommendations for a greater effort to get consumers of electrical heat to convert to more energy-efficient forms of heating.

"The government will now work to see to it that a general agreement is reached between the energy companies and the authorities about converting electrical heat," writes Sjursen, who also believes that in the area of realizing savings on electricity, "there is still a significant potential that can be realized."

FRANCE

French Biofuel Scientific Group Created

BR1305141794 London REUTER Textline Database in English 11 May 94

[Unattributed article from Brussels EUROPE: "European Union Ecofin Council To Debate Reduction of Taxes on Biofuels on 6 June—Creation of a Scientific Group in France"]

[Text] Brussels/Tours, 10 May 94 (AGENCE EUROPE)—As part of the first European Forum on Biofuels, the European Commissioner with responsibility for taxation, Mrs Christiane Scrivener, has announced that the Ecofin [Economic/Financial] Council will examine the plan for a reduction of taxes on biofuels at its meeting on 6 June.

Meanwhile, the French government has set up a scientific group that will attempt to promote the development of biofuels along with the concerned ministries (Industry, Environment, Higher Education and Research, Agriculture and Fisheries), announced Agriculture Minister Jean Puech, as he inaugurated the Forum. The new group "Agriculture for Chemistry and Energy" (Agrice), to be chaired by Philippe Mangin, brings together representatives of the National Institute for Agronomic Research (INRA), national agricultural trade unions and industry. Mr Puech added that "the industries concerned by the future of our agriculture, as well as potential customers for the technologies being explored also wish to take part. Two major French enterprises, Total and Rhone-Poulenc, are currently representing these interests". France has chosen "an intelligent alternative to traditional set-aside, namely, industrial set-aside", he added.

New, Modern Nuclear Fuel Reprocessing Plant To Be Opened

BR1305142894 Paris LE MONDE in French
12 May 94 p 19

[Jean-Francois Augereau report: "COGEMA Will Be Able To Reprocess 1,600 Tonnes of Nuclear Fuel Per Year"]

[Text] The government has just given the go-ahead to the opening of the latest units in the second nuclear fuel reprocessing plant in La Hague (Manche). This new unit, with an annual capacity of 800 tonnes, should come into production this summer and reach its nominal power in 1996. It will be entirely dedicated to fuel from the EDF [French Electricity Company] power stations.

The General Nuclear Materials Company (COGEMA) has just received from Industry Minister Gerard Longuet and Environment Minister Michel Barnier permission to start up the latest units of its new UP2-800 irradiated fuel reprocessing plant in La Hague (Manche). This decision is the latest stage in the program to extend the reprocessing capabilities of the La Hague plant launched in 1979.

Henceforth COGEMA has two factories, each with a capacity of 800 tonnes, on this nuclear site situated at the extremity of the La Manche departement, a few kilometers from Cherbourg. The first, UP3, which came into service on 23 August 1990, is an ultramodern plant, valued at 27.8 billion francs [Fr], the cost of which was virtually completely funded by the contracts which 27 foreign electricity companies have signed with COGEMA for the reprocessing of around 7,000 tonnes of nuclear fuel.

EDF Contract

The implementation of these contracts, which has already begun, had prompted some anger in November 1992 when France delivered 1.5 tonnes of plutonium to the Japanese authorities. Between now and the year 2000, around 20 tonnes of plutonium should leave for Japan, because it is the very function of reprocessing nuclear fuel to sort through the "ashes" left by the reactors to find the reusable pure material (96 percent uranium and 1 percent plutonium) in the waste proper (3 percent).

Although foreign reprocessing requirements are fulfilled by the operation of UP3, at present the only factory in the world capable of reprocessing on an industrial scale, EDF's requirements should be fulfilled by the very new UP2-800 plant. Moreover, EDF has signed a contract with COGEMA for the reprocessing of 8,400 tonnes of fuel from its pressurized water reactor (PWR) nuclear power stations.

Around Fr30 billion has been spent (the difference in price between the two factories is partly due to taking account of inflation) to equip this new unit, which was built on the remains of the former UP-2 plant which

reprocessed its first barrel of fuel in June 1966, but which experienced real problems during its conversion for the reprocessing the PWR fuel in the eighties. It then only slowly reached its nominal production capability set at 400 tonnes per year.

Installation Rethought

UP2-800 is, however, an installation which has been entirely rethought, virtually an identical copy of UP3, but which has benefited from the experience of this factory which, so far, has reprocessed a little more than 1,900 tonnes of foreign used fuel. But it differs from it slightly in that in the future it will have to reprocess relatively limited tonnages of other kinds of fuel known as mixed uranium-plutonium fuels (MOX).

Taking this MOX reprocessing into account in the UP2-800 concept made it necessary to think in advance about process modifications because of the presence of bigger quantities of plutonium in the installation. Therefore, there is already a plan to build a factory known as R-4, which will make it possible, in particular, to run that process. It could start around the year 2000 and, according to COGEMA, presupposes "a technological leap forward if we wish to keep reprocessing costs down."

This concern seems particularly legitimate because, after the lifting of many legal obstacles, Britain is starting up its Thorp plant worth 2.8 billion pounds (around Fr25 billion) situated in Sellafield in northwest Britain. But, although COGEMA is no longer alone on the reprocessing market because of this competition, the announcement of the launch of UP2-800 will undoubtedly revive the controversy over the value of reprocessing used fuel.

GERMANY

New Dioxin Hazard Said 'Threatening' Germany

BR1905081494 Bonn DIE WELT in German 22 Apr 94
p 1

[Article by Dankwart Guratzsch: "Another Dioxin Alarm in Germany: PVC Production Generates Seveso Poison in Previously Unknown Quantities—Inquiry in Lower Saxony"]

[Text] The federal and land environment ministries are alarmed: A new dioxin hazard, the extent of which is still unknown, appears to be threatening the Federal Republic of Germany.

Yesterday, the Lower Saxony Environment Ministry ordered an inspection of the soil and waterways in the area surrounding the Jadebusen and the PVC [polyvinyl chloride] producer ICI's works, including mussels and sediment, for contamination by chemical toxins, including the Seveso poison, dioxin.

Federal Environment Ministry spokesman Cay Frimuth told *DIE WELT*: "Dioxins occur in PVC production in quantities of which we were previously unaware and which have shocked us." Armin Basler, head of the Chemicals Safety Department, added: "To date, everyone has been pointing to the waste incinerators as the presumed major dischargers of dioxin, but now we are seeing that emissions from production are much higher."

Lower Saxony's Environment Minister, Monika Greifahn (SPD [Social Democratic Party of Germany]), who was the first to trace the poison to its source, mentioned an additional ground for concern: "Exactly why and at which point in the production process dioxins occur remains a complete mystery."

The realization "that these substances are also transported in water" was recent, said Greifahn.

The high dioxin content in the flue gases discharged by a Hoesch AG sintering plant had already come to light in North Rhine-Westphalia—an environmental scandal that has been keeping a board of inquiry set up by the land parliament in Duesseldorf busy ever since. The allegation is that Environment Minister Klaus Matthiesen (SPD) failed to make public his knowledge about the dioxin discharger.

The map of the Federal Republic is now being systematically scanned by computers to establish the emission zones of the 10 German PVC manufacturers. The sludge "paths" must also be traced.

The Wilhelmshaven works alone has been piling 400 tonnes a year of highly contaminated sludge onto Lower Saxony's hazardous waste dumps: Its dry substance contains record quantities of 400,000 nanograms of the superpoison per kilogram. There is currently no technological solution at all for controlling this new source of poison. Work on initial preventive strategies is scheduled for completion by the summer.

BASF Inaugurates Plastics Recycling Factory

BR1905081194 Bonn DIE WELT in German 26 Apr 94 p 22

[Article by Michael Wendel: "Black Gold From Plastic Waste: Plastics Recycling Will Channel Packaging Floods—Pilot Plant Starts Work This Week"]

[Text] About 10 million tonnes of plastics and elastomers are produced and processed throughout the year in the German plastics industry. In 1993, more than 280,000 tonnes ended up in the yellow Dual System (DSD) collection sacks as packaging waste. DSD managers expect 440,000 tonnes of plastic packaging bearing the green dot by the end of 1994, the plastics mountain for recycling being expected to swell to 750,000 tonnes by the end of 1986—much more than the recycling capacity currently available in Germany. However, the much-prophesied waste flood by no means rattles the top

DSD people, who are temporarily afflicted by tight finances and reprocessing bottlenecks. They are placing their trust in a confident promise made by Plastics Manufacturing Industry Association chairman Albrecht Eckell: "The problem of plastics recycling will have been cracked by the end of 1998."

The magic formula is reprocessing into raw materials. Instead of just melting plastics down to make park benches, flowerpots, and noise insulation panels, yogurt pots, detergent bottles, and similar waste will be used as sources of raw materials. This week, the BASF chemicals group (on whose board Eckell sits) is bringing on stream a pilot plant in Ludwigshafen, where ground-down plastic waste will be liquefied at 400 degrees Celsius then split into oils and gases. Up to 950 grams of petrochemical products will be distilled in this way from every 1,000 grams of plastic and used as raw materials in the BASF factories. The PVC [polyvinyl chloride] component will be separated out as Javelle water and processed in the hydrochloric acid works. The plant, claims a BASF brochure, will operate without pressure in a closed system, so it will discharge "virtually no emissions."

The 40-million German mark [DM] pilot plant has an annual recycling capacity of 15,000 tonnes. The follow-up model, which is scheduled to come on stream early in the summer of 1996, is of a different caliber: It can reprocess up to 300,000 tonnes of contaminated, unsorted DSD packaging—sufficient volume, together with the VEBA [United Electricity and Mining Works AG] coal-oil plant in Bottrop (170,000 tonnes) and the RWE [Rhine-land-Westphalian Electricity Works] plant (70,000 tonnes), to meet the requirements of the Packaging Regulation until that date.

The new industrial-scale technology admittedly has one drawback: These expensive plants—BASF's investment will amount to DM300 million—must keep running, so they need a constant plastic waste input. This does away with the incentive to avoid creating packaging waste. In order to ensure supplies of DSD material, BASF is also working with the Cologne-based Otto Group, whose annual sales of DM1.3 billion make it one of the giants on the waste disposal market. Group chairman Otto answers objections that central plastics recycling will speed up the polarization process in the industry by pointing out that small and medium-sized disposal firms could participate in a "nationwide project" at 15 regional logistical centers.

Plastics recycling does not come cheap. The Dual System pays BASF DM325/tonne—about a 10th of the cost of producing a tonne of recycled raw materials, collection, sorting, and separating the packaging waste taking the lion's share. One tonne of crude oil costs DM200 on the world market. In the ultimate analysis, the consumer has to pay for it as well at the checkout—the "green dot" is what makes this possible.

Hoechst Stops Production of CFC's

BR1905080694 Munich SUEDEDEUTSCHE ZEITUNG in German 22 Apr 94 p 7

[Text] Frankfurt-based Hoechst AG has discontinued CFC [chlorofluorocarbon] production. The chemicals group's Stammwerk plant, which has already produced 8,100 tonnes of these ozone-damaging substances in the current year, was shut down on Thursday and will be demolished for scrap. A smaller production plant at Hoechst Brazil will cease production by 1995 at the latest, the company has announced. Used CFC's will no longer be reprocessed by Hoechst in the future, but broken down into their chemical components. There is thus only one CFC producer left in Germany, Solvay in Hannover. A Solvay spokesman has said that this firm, too, intends discontinuing production within the next few weeks. Last year, Solvay produced 21,000 tonnes of CFC's.

Hoechst, which enjoyed 40 percent of the domestic and 5 percent of the world market, states that it is the first producer in the world to cease CFC production. It used to produce up to 90,000 tonnes a year. The group decided in 1989 to cease production, which will be banned in Germany from 1995 onwards. Chlorinated CFC's, which are in widespread use as coolants in refrigerators and air-conditioning systems, constitute the main threat to the ozone layer, which protects the earth against ultraviolet solar radiation, at altitudes between 15 and 20 kilometers. The chlorine contained in these substances destroys the ozone chemically. Even now, a million tonnes of CFC's are still concealed in chilling and air-conditioning systems and plastic foams the world over.

Hoechst has recently begun producing the ozone-friendly R134a coolant as a substitute for chlorofluorocarbons. Environmentalists, however, complain that this substance still contributes to the greenhouse effect. There was an explosion in the new R134a production plant a few weeks after it entered service, in mid-March. Since then the plant has been at a standstill by order of the authorities.

DASA, DARA Build Earth Satellite

BR1905080394 Bonn TECHNOLOGIE-NACHRICHTEN MANAGEMENT-INFORMATIONEN in German 25 Mar 94 pp 22-23

[Text] The German reflyable science satellite Astro-Spas is currently being fitted out for its next mission at the German Aerospace AG (Munich-based DASA) Satellite Systems Division. The German Space Agency, DARA, and DASA have presented the satellite's new instruments and tasks at a news conference in Munich: The science satellite, bearing the name Crista-Spas, is scheduled to begin its "inspection" of the upper earth atmosphere in October this year.

Crista-Spas has the job of studying the upper earth atmosphere (10 to 150 km). The photochemical, energetic, and dynamic processes that take place in the upper atmosphere are of great significance to life on earth. An understanding of these processes and the behavior of the atmosphere is central to an understanding of current environmental issues, such as the ozone problem and the much-feared climate problem.

The measurements will be performed with two instruments: Crista and Mahrsi. Crista (cryogenic infrared spectrometer and telescope for the atmosphere) is an infrared measuring device with unprecedented three-dimensional resolution: 2.5 km vertical and 500 by 600 km horizontal.

It was developed to study small-scale dynamic structures in the upper atmosphere that have hitherto eluded measurement by satellite. Small-scale structures in the several hundred to several thousand kilometer range have only been detected to date by rocket, balloon, or ground measurements. However, these only gave local "snapshots," with the result that very little is known of the frequency of small-scale structures in time and space. Crista will make the first-ever global measurement of these structures and attempt to determine their frequency.

The measurements performed by Crista will be complemented by Mahrsi (middle-atmosphere high-resolution spectrograph investigation), a device for measuring radicals in the atmosphere. Mahrsi's main task consists in the global definition of the vertical density profiles of the hydroxyl radical and nitrogen oxide with 2-kilometer resolution at an altitude of 40 to 150 km. The experiment will also provide information as to the neutral density and temperature in the atmosphere.

Responsibility for the development of the experiments, the scientific preparations for the mission, and the analysis of the parameters recorded is shared by the Bergland University in Wuppertal (Crista) and the Naval Research Laboratory, Washington, D.C. (Mahrsi).

The third Astro-Spas mission is scheduled for the fall of 1995 and will be a second flight by the Orfeus and Imaps telescopes, which are being modified and enhanced in the meantime in the light of experience acquired during their first flight. A fourth mission—with the Crista/Mahrsi payload—has been firmly booked for fall 1996.

Siemens, VEW To Cooperate in Energy Production

BR1905080194 Bonn TECHNOLOGIE-NACHRICHTEN MANAGEMENT-INFORMATIONEN in German 25 Mar 94 pp 21-22

[Text] Dortmund-based VEW [United Westphalian Electricity Works] AG will work with Siemens AG of Berlin and Munich in the future on thermal waste disposal, and an agreement to this effect has recently

been signed. As the two corporations announced on 16 March, the purpose of working together is to make greater use of the low-temperature carbonization process developed by Siemens-KWU [Power Generation Division], an environment-compatible technology for disposing of domestic waste residue, domestic-type industrial waste, and sewage sludge that cannot otherwise be avoided or recycled. In the view of both parties, it represents the best method of meeting the strict requirements of ecological and economical waste residue reprocessing. Low-temperature carbonization makes for a particularly high recycling quota and an exceptional energy output.

Siemens and VEW stated that working together would primarily enable them to offer the local authorities responsible for waste disposal, principally in the catchment area served by VEW and its east German subsidiary, Halle-based MEAG [expansion unknown], not just partial solutions but a complete package comprising everything from planning, building work, and financing to the operation of thermal disposal plants.

In low-temperature carbonization, residual waste is converted into commercial substances and electricity, virtually without residue and effluent problems, by a combination of low-temperature carbonization and, subsequently, high-temperature incineration. Organic pollutants, such as dioxins and furans, are safely destroyed, and inorganic pollutants are securely bound in a hot-melt granulate. The leach-resistant granulate can then be used as a substitute for sand or gravel in, for example, road building.

A low-temperature carbonization plant with an annual throughput of 150,000 tonnes of waste residue salvages an annual average of 6,750 tonnes of iron and over 700 tonnes of aluminum, which can be smelted without further processing and recycled as high-grade steel and aluminum products. The same plant also generates up to 75 million kilowatt-hours of electricity. For every tonne of domestic waste, no more than 3 kilograms of reaction products from the flue gas dust collector has to end up on the hazardous waste dump, the equivalent of only 0.3 percent of the original quantity at the very most.

Lafontaine Discusses SPD 'Ecological Renewal'

94EN0323A Frankfurt/Main FRANKFURTER
RUNDSCHAU in German 23 Apr 94 p 5

[Interview with Oskar Lafontaine, SPD deputy chairman and minister-president of the Saarland, by Helmut Loelhoeffel; place and date not given: "Those Who Do the Right Thing by the Environment Will Be Rewarded"]

[Text] **Loelhoeffel:** Your name is synonymous with the social democratic concept of "ecological renewal of industrial society." The SPD's government program quite intentionally focuses on work, social security, and economics. Why is it that you allow the ecological component to be shortchanged?

Lafontaine: Ecological modernization is a pivotal reform project as far as we are concerned. Work, social security, and ecological renewal are not contradictions by any means. We wish to combine work and the ecology and make it clear that ecological renewal will result in more jobs and that it is a social task our society must deal with, because intolerable ecological conditions cannot be permitted to exist from a social point of view.

Loelhoeffel: But the Greens and the environmental groups are saying that the draft program does not contain very much solid language aside from some general declarations of intent. They doubt that the SPD is serious about new initiatives on the environment. There even are critical voices from inside the SPD itself.

Lafontaine: From the point of view of the Greens I can understand that criticism. They are a political party in competition with us and they would like to cast doubt on our credibility on ecological issues. What is more, they do not want to come out as they did in the last Bundestag election when they failed to gain any seats. By now the voters have a very good idea of where the SPD stands on environmental issues. We already stated in the last Bundestag election campaign that an SPD government would take decisive steps aimed at ecological renewal which would be markedly different from the practices of the Kohl government. One of the central projects still is an ecological tax reform.

Loelhoeffel: The draft program merely refers in general terms to an energy tax, however. Michael Mueller, the spokesman of the SPD parliamentary group, and others deplore the lack of a clear statement on higher mineral oil taxes for example. One cannot leave the transportation sector out of the equation. After all, it accounts for about 25 percent of energy consumption.

Lafontaine: Unfortunately both the public and large segments of the political parties still do not understand what ecological tax reform is all about. It is not designed to provide funds for this or that project; it is not a way of making people pay more taxes but a way of setting new price signals. The principal idea behind this reform is to place less of a load on work and to raise taxes on the consumption of energy and materials harmful to the environment. This will create incentives to use less energy and to put new products on the market which conform to environmental standards. Those who do the right thing by the environment will be rewarded. Employees will have more money in their pockets because income taxes or other payroll deductions imposed by law will be cut.

Loelhoeffel: Why put the blame on the public rather than admit weak points in selling the program?

Lafontaine: I have seen 100 headlines which read "fuel taxes to rise." But I have not seen a single headline referring to the ecological tax reform which said "deep income tax cuts" or "cuts in payroll deductions." Not a one. The media almost always focus on the seemingly

negative aspects, and those that are positive are suppressed. And that does harm to this important reform project.

Loelhoeff: But it is difficult to understand your project, if one cannot gauge its consequences.

Lafontaine: The consequences are that there is less strain on the environment and that the working population is relieved of unnecessary burdens—and that creates more jobs. Employees get to keep more of what they earn and can decide on their own what they wish to spend and consume. That needs to be understood because we need to obtain the approval of the public for this ecological tax reform. Better environmental policy can only succeed and the proposed lessening of the strain on the environment can only be achieved if the majority of the voters is for it. Unfortunately a good many environmentalists fail to see the connection. Those who would like to see the price of one liter of gasoline raised to 5 marks [DM] may salve their conscience. They may even gain the support of a number of delegates to a party congress. But they make it impossible to win a majority of the voters over to their position.

Loelhoeff: Just the same, we would like to hear some real numbers. Who will have to pay how much when?

Lafontaine: It would be both irresponsible and unwise from the point of view of economics to decide on scope and timing without taking the economic situation into account. For instance, the decisions reached would depend on whether the automobile industry were doing well or doing poorly. Many other factors would also play a role. That applies to all decisions which have economic and social consequences.

Loelhoeff: What other factors contribute to the SPD's credibility with regard to environmental protection?

Lafontaine: The second important point in addition to ecological tax reform is that we believe the production of electric power from nuclear reactors is untenable and therefore wish gradually to relinquish that option. I talks I have had with the environmental groups I got the feeling that this particular demand for which many protest demonstrations were held over the years has been all but checked off because it has long since been included in all the wish lists. Real progress in the nuclear energy field alone provides an ecological justification for a change of government in Bonn. The third point I would like to mention is the restructuring of research policy which needs to be focused on the environment. We have to build a bridge into the solar age, i.e. all technologies which conserve energy, lessen the strain on the environment, and develop renewable forms of energy, including the use of solar and wind energy, must be supported in entirely different ways from now on.

Loelhoeff: The current version of the SPD government program puts the ecological tax reform off to the time "European Union [EU]-wide regulations" have been

adopted. That sounds like procrastinating a solution and shifting responsibilities. What is it that the SPD can and will push through?

Lafontaine: We have a first draft in hand. It goes without saying that we will not wait until every EU country has understood the need for ecological tax reforms. I am in full agreement with Rudolf Scharping on that point. Let me remind you of the debate on the catalytic converter and lead-free gasoline. If we had waited then until all the EC countries availed themselves of that technology, it would have been introduced on a Europe-wide scale at a much later date. We took the lead and the result was that the technology spread all over Europe. As a consequence, new jobs were created here in Germany as well.

Loelhoeff: Is there a need to change, clarify or augment other passages of the ecology segment of the present draft? Do you yourself think more forceful language is needed?

Lafontaine: There is a debate on speed limits. The present draft states that we must have speed limits that are ecologically suitable and contextually meaningful. There is a specific reference to the need for a 30-kilometer speed limit in residential areas. Independent of the debate on speed limits as such our principal aim is to make progress on the introduction of new environmental technologies. The most important item on the agenda are automobiles that conserve gas by using two to three liters per 100 kilometers.

Loelhoeff: Are you giving any thought to dictating fuel consumption limits to the automobile industry? Or how else do you propose to bring about the development of more efficient and ecologically friendly engines?

Lafontaine: I am opposed to more regulations, and that goes for the ecology as well. The main thing is to cut down on energy consumption. That, after all, is the political goal. The political establishment should exercise restraint with regard to setting exact technical standards on specific environmental targets. That should be left to the technicians and to competition. That is why I am in favor of restricting ourselves to achieving the goal of lower consumption. And that is where the price signal comes in which we are putting up with the ecological tax reform.

NETHERLANDS

Drive Wheel in Car Saves One Third of Fuel

BR1305142994 Amsterdam TECHNISCH
WEEKBLAD in Dutch 13 Apr 94 p 4

[Article by Walter van Hulst: "Automobile Flywheel Saves One Third In Fuel"]

[Text] Eindhoven—The combination of a hybrid drive, a high-speed rotating drive wheel, a combustion engine,

and a continuous variable transmission (CVT), can save 30 to 40 percent of fuel in private cars without any loss of performance or comfort.

E. Spijker, who hopes to obtain his doctorate at the Technical University of Eindhoven on Friday 15 April, includes in his thesis solutions for the regulation and control of such a hybrid transmission in combination with a CVT, using some electronic measurement and control engineering but based mainly on mechanics. Spijker conducted his research in collaboration with Van Doorne's Transmission in Tilburg. In the Traffic Technology Group's laboratory, run by Professor Dr. Ir. R. Kriens in Eindhoven, a working model is being tested. According to Spijker, enough experience has now been obtained to be able to build a moving prototype. There will probably be a follow-up to his research.

The hybrid transmission, when combined with the CVT, is more or less an alternative to the electric car, which has a short driving radius and is really only suitable for use in urban areas. The research carried out in Eindhoven is aimed at the curbing both consumption by and emissions from the ordinary gas-driven car.

In the past, much research has already been carried out on both the CVT and the use of a drive wheel, and also on a combination of the two. Initially the CVT was known for its rather weak transmission, certainly when combined with a drive wheel. Van Doorne's Transmission has, however, developed it to become an extremely dependable technology.

Control and regulation of the combined CVT and drive wheel was another problem, partially due to vibration and possible peak torque. Such a flywheel continues turning when something goes wrong. Allowing smooth changes in revolutions was also quite a job. Today's spoiled driver is, after all, used to a vehicle that does not vibrate.

The research institute CCM in Nuenen, collaborates with Novem on a drive wheel for use in buses and trains. Dr. Ir. F. Thoolen, the company's project leader, obtained his doctorate at the end of last year at the Technical University in Eindhoven on an electronic regulation. The CCM design is at the moment undergoing endurance tests, the results of which are expected by the coming Spring. In his design Spijker uses a fiber-reinforced plastic drive wheel developed by CCM which is light and small, and suitable for very high revolutions, but he solves the problem of regulation mechanically. He is very enthusiastic about the practical applications. It will be possible to drive a prototype within a few years, without any space problems. "The whole system has already been built once into a Volvo 480 which did indeed have a very sloping hood. But that was not a problem. The only problem was the air filter."

The Eindhoven Traffic Technology group is primarily focused on the themes of safety and the environment. According to Spijker and his supervisor, Ir. R. van der

Graaf, as far as the environment is concerned, the automobile industry refuses to cooperate when it involves long-term, speculative research. Competition is cutthroat and investment has to produce quick returns, particularly now that the sector is in a deep depression. A disappointment for the Kriens group was the withdrawal two years ago of Volvo as a research partner. But the Eindhoven Technical University has decided to continue by itself in the field of variable transmission, wherever possible with the support of third parties such as Novem [Netherlands Association of Energy and the Environment].

SWEDEN

Government Favors Ban on Leaded Gasoline

94WN0261A Stockholm DAGENS NYHETER
in Swedish 6 Apr 94 p C 1

[Article by Thomas Lerner and Lars-Ingmar Karlsson:
"Ban on Unleaded Expected"]

[Text] Finance Minister Bo Lundgren and the government are considering tightening the environmental requirements for gasoline. In a year there could be a ban on selling ordinary unleaded gasoline, and only the less environmentally hazardous class 2 variant would be allowed.

In a DAGENS NYHETER interview on the connection between the economy and the environment, Bo Lundgren took a generally positive view on stricter economic control in order to reduce the environmental problems. But he clearly stakes out the preconditions. One of the principal demands is that competition must not be distorted, and he uses the environmental classification of unleaded gasoline as an example.

"If there were only two producers selling the new environmental class 2, a complete halt would be wrong. In that case it would be better to have a tax refund for it."

Waiting for the European Union

Today all companies sell environmental class 3 (in principle ordinary unleaded gas). The environmentally better class 2 has been sold only by OK, Uno-X, and Texaco since last year.

But now that the other companies are also expected to start selling environmental class 2 as soon as within a year, why then be satisfied with a tax refund? the finance minister reasons.

"When there are good alternatives to a product one cannot introduce administrative bans," in Lundgren's opinion.

The government does not yet believe it has all the facts in order to submit a proposal for environmental classification of gasoline. The study was ready a year ago, to be sure, but the EU [European Union] must also have time to have its say.

"I could very well imagine that Sweden might be a pioneer in environmental classification. It could be implemented at the coming turn of the year," says Bo Lundgren, but points out that the EU must first agree to the Swedish way.

Bo Lundgren and the nonsocialist government have been the subject of harsh criticism for not using economic means of control as a way toward a better environment. A toothless surcharge on cadmium in commercial fertilizer and higher taxes on leaded gasoline are more or less all the government has accomplished, environmental researcher and Social Democrat Per Kageson recently wrote in DAGENS NYHETER.

"Starting with what we had, we have done a lot," Lundgren counters.

Higher Energy Taxes

"Look at our reduction of the carbon dioxide tax for industry. Keeping a high energy tax for industry would both create economic problems in Sweden and aggravate the global environment. Our energy tax reform prevents Swedish companies from becoming established abroad."

Somewhat surprisingly, Bo Lundgren can very well imagine that the energy taxes on industry might be raised. He can even accept that the distribution is changed so that the households assume a comparatively smaller share of the burden and industry a larger one. But it is not yet time for that, he says. All countries, at least in the EU, must also participate.

"If I get the chance, I will work for an orientation toward more environmentally based taxes."

Will you push these issues in the EU?

"Yes, if I get the opportunity. I think we should have been able to do more with the coordination internationally than we have."

So how does one switch taxes from labor to environmentally hazardous activities, for example? The environmental movement demands such a change in taxation and the EU has also begun to discuss it now.

"Many overrate the opportunities for lowering taxes on labor. The tax base for work is much broader than the one for the environment," Lundgren says and describes the difficulties created by this imbalance.

"A cut in the employer's tax by 5 percent, for example, costs 20 billion kronor. That is a great deal compared with all environmental and energy taxes," the finance minister says and stresses that he is by no means an opponent of this thinking. Here as well Sweden must keep pace with other countries.

However, it is probably not primarily the tax on work that will be switched to "green" taxes.

"I think one should begin by lowering the value-added tax. The damaging effect of the employer's tax could be tackled in a different way. It is more difficult to do so with the value-added tax."

New Study

Both the change in taxation and other links between taxes/fees and the environment will be analyzed in a new study. Bo Lundgren therefore prefers to wait with inflexible opinions on what is best.

"I have to think about what I am prepared to do in order to have whiter snow at my farm in Scania," he says and remembers that the snow sparkled more in his youth, when the environmental destruction had not progressed so far.

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